REPORT

OF THE

PROCEEDINGS AND RECOMMENDATIONS

OF THE

NINTH ANNUAL BLISTER RUST CONFERENCE

HELD IN

BOSTON, MASSACHUSETTS,

FEBRUARY 18, AND 19, 1924.

"Nearleather"

R E P O R T

of the

Proceedings and Recommendations

of the

Ninth Annual Blister Rust Conference

held in

Boston, Massachusetts, February 18, 19, 1924.

P R O G R A M

Ninth Annual Blister Rust Control Conference

February 18th and 19th, 1924

Monday 10 A. M. - - - - - - - - - - - - - - - Room 136, State House, Boston, Mass.

"RANGE FINDERS."

1. Address - Second down, six to go in Blister Rust Control --Dr. W.A. Gilbert
2. Our goal - One million five hundred thousand acres each year. -S. B. Detwiler
3. A basic factor in the success of a cooperative control program -G. H. Collingwood

"TARGETS"

We have a big problem before us in our eight year cooperative blister rust control program in the Northeastern States. Prior to 1922, control measures were applied on 1,300,000 acres. In 1922, the first year under this program, control measures were applied on 481,000 acres. In 1923, the second year, control measures were applied on 882,000 acres. By 1930 we must secure the application of control measures for the first time on 5,500,000 acres and in addition rework 3,500,000 acres or a total of 9,000,000 acres. This is an average of 1,500,000 acres for each of the remaining six years of the co-operative control program. To accomplish this great task we must carefully review our cooperative program and make a detailed plan of work for each State. The purpose of our conference this year is a round table discussion looking toward the immediate preparation and execution of the most practical and productive plans ever formulated in cooperative blister rust control work, to the end, that our goal of 1,500,000 acres in 1924 will be realized.

"BIG GUNS"

The discussions will continue on Tuesday, the conference opening at 10 A. M. The State Cooperators will speak about the work from their viewpoints. Mr. H. E. Allanson will speak on the "Responsibilities and obligations of employees," Dr. Gussow or his representative on the "Blister Rust in Canada," and Dr. Haven Metcalf on the "Scientific Investigation of Cronartium ribicola Fischer."

"CHUCK"

On Monday at 6:30 P.M. a dinner will be held at the City Club. Informal talks will be given by Mr. S. T. Dana on the "Northeastern Forest Experiment Station," and by Mr. H. A. Reynolds on "Town forests." Dr. Haven Metcalf will introduce the speakers.

"TAPS"

NOTE: A typewriten copy of each talk should be left with the Secretary for mimeographing into a report of the proceedings of the conference.

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Second Down, Six to Go, in Blister Rust Control.

by

Dr. A. W. Gilbert, Commissioner,
Massachusetts Department of Agriculture.

About a year ago as chairman of the American Plant Pest Committee and co-worker in the campaign for controlling white pine blister rust, I had the pleasure of welcoming you to the first conference following inauguration of the cooperative eight year control program. At that time, we had completed the first years work under this program and met to consider results of our united efforts and to look ahead that we might better comprehend salient features in our important problem. We have now reached the second mile post and again I am glad to welcome you here that we may inventory our achievments, retrospect our experiences and for our mutual benefit, clearly vision the future. In the past these meetings have developed a spirit of cooperation and helpfulness which has led us on and inspired greater efforts. May that same spirit continue to pervade our meetings.

One-fourth of our time is gone. Have we thoroughly completed one-fourth of our program. If not, why? Here, in mutual confidence we may consider our triumphs and failures and obtain the helpful counsel of our fellow workers, which in the past has contributed so much to renewed strength and enthusiasm for our task. Before us, we have six years in which to complete the cooperative program including problems that are urgent, numerous and intricate. We have few or no precedents to follow. Our program is new, our work is complicated and hence we must carefully chart our future course and profit by experience. But in spite of these difficulties, we have progressed. The turning of the second leaf in our program greets us after a period of remarkable success. Accomplishments of the past year have amounted to twice that of its predecessor which is exceedingly gratifying to us all, but even this is not enough. This year we must double the acreage eradicated in 1923 and maintain that standard during the remaining five years.

It is hardly necessary to remind you of the fact that the public is watching our progress and that the public will judge us by our accomplishments. If we are to succeed, each and every one of us must know his part and do it. A successful football team coordinates its efforts and moves as a unit. It depends more upon its united strength than upon its individual stars. Its goal is threatened by each fumble, by each faulty pass or moment of weak leadership; in fact, by failure for any cause to effectively cooperate in all departments of the game. The same is true of our blister rust organization. We must have team work and strong leadership. Each unit must do its part effectively and its efforts must be coordinated with those of other units to accelerate the momentum behind our work. To do this we must have the kind of leadership that is vigorous, inspiring, and compelling, the kind of teammates that push and pull forward in every scrimmage. With such team-work and spirit throughout our organization, we will make the blister rust control program an outstanding example of successful cooperation and achievment.

The blister rust is here to stay. It brings to us a problem which is national in scope and far reaching in its effect upon our economic and industrial development. Each and every one of us uses white pine in one form or another and by accomplishing our control program the continued forest production of this essential wood, the chief timber tree in this region, is assured. Altho slower in action than the chestnut blight, the blister rust is nevertheless equally constant in action and certain in destruction. It readily kills mature trees, but its greatest damage is in wiping out the young pine trees of today which make the mature timber of tomorrow. In the Northeastern States we find this destructive disease wherever pines and Ribes are associated. In the Northwestern States it threatens an exceptionally valuable and important timber supply. We have witnessed the havoc it has wrought upon unprotected pine in many localities and

we see its potential damage in the future. To accomplish its general control is a gigantic task, but a public service worthy of our best efforts. We have pledged ourselves to this undertaking - its attainment must be our reward.

Appropriations cannot continue indefinitely. There is a time limit and rightly so, for the completion of the main feature of our control program. We have successfully completed a portion of the program, overcoming great obstacles, but we have just gotten under full headway. The greater part, lies before us, as yet unfinished. It is to consider effective ways and means of completing the program that we have gathered here today. For the successful prosecution of our task we need the best of plans, the best of leadership, the best of organization, the best of administration, the best of coordination, the best of cooperation. Have we attained them? If not, we must, for the degree of perfection attained in these essential features determines if our program is to go forward according to schedule. We must broaden our vision, that we may realize greater accomplishments than ever before. With these thoughts, I urge upon you a full and free discussion of the means by which we may reach our goal, bearing in mind that our interest is mutual, our success is mutual and our failures are inseparable.

Our Goal - One Million Five Hundred Thousand Acres Each Year.

by

S. B. Detwiler, Office of Blister Rust Control,
United States Department of Agriculture.

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It is hard to realize that this is our ninth yearly blister rust conference. In 1915 the leaders of forestry work in the eastern pine-growing states organized the first of these conferences and in common council undertook the fight to save a forest resource of national importance. These meetings gave us courage in the beginning and have maintained our unity of purpose throughout. The success of our work is principally due to the strength of the cooperative spirit among us. Shoulder to shoulder, we have pulled many large and thorny gooseberry bushes. Today we must devise a way to pull two Ribes in 1924 for each one uprooted in 1923.

How can we do twice as much work this year with no increase in men or appropriations? Our eight year cooperative program must go through. Our present rate of progress is hardly sufficient to accomplish the initial work on new control areas. We must find a way to immediately determine Ribes conditions on the control areas of 1917, 1918 and 1919. Some of these will merely need scouting but areas where Ribes were originally numerous will have to be gone over by crews this year. We do not guarantee pine protection for more than five years after the first eradication work. Our efforts will be judged a failure if we do not keep the control areas clean. We must not lose the ground gained in earlier years. Prior to 1922, control measures were applied on 1,300,000 acres. In 1922, the first year under our present program, control measures were applied on 481,000 acres. In 1923, the second year, control measures were applied on 882,000 acres. By 1930 we must secure the application of control measures for the first time on 5,500,000 acres and in addition rework 3,500,000 acres or a total of 9,000,000 acres. This is an average of 1,500,000 acres for each of

the remaining six years of the cooperative control program. How can we do this work?

The answer is better planning and better coordination. Each man must plan his work, budget his working funds and allot his working time, so as to get more work done. We must concentrate our effort and proceed on well-planned schedules. We must pay more attention to the requirement that our work must result in continued protection of the pines. During the past year we have been on our mettle and as a result the acreage cleared of Ribes was double that of the previous year. I attribute this increase to the momentum gained by using Extension methods in the educational phases of our work. By this means we got much work done by persons who were not on our payroll. It points the way we should drive in 1924.- to stimulate cooperation and to thoroughly organize this outside help. Planning will perfect our organization and will get the job done. De each of us have adequate plans for the work under our direction? That is the big issue at this meeting.

I will outline the main points to which I feel we must give special attention this year. These ideas are not new but they need to be stressed.

Budget. Every dollar we spend should be made to produce two dollars or more of local funds spent in Ribes eradication. Each man should have an individual plan of work and an individual budget that is in harmony with the plan and budget for the project to which he is assigned. The budget should not be elaborate but it should be gone over each month by the individual and used to measure accomplishment and to keep a keen eye on the road ahead. The budget is an indispensable part of an effective plan of work. It should be made the source of inspiration, and real help. If it causes worry and bickering over details, it is because it is not being wisely used.

From 1916 up to 1922, cooperative blister rust control work was largely

experimental because we were dealing with a newly introduced disease. The behavior of the disease in this country had to be determined and practical control measures developed to protect a forest resource of national importance. During the experimental stage, state and federal cooperative funds were expended dollar for dollar in this work, which was largely eradication of Ribes on demonstration control areas. With the development of practical local control measures which could be applied by individual pine owners, a change in policy became necessary. We recognized that blister rust control work must become part of the regular procedure in the growing of the pine crop and that it should be done by the pine owner or at his expense. Congress recognized the emergency nature of the problem and the need for immediate and concerted action by pine owners. Pine owners in general did not know the disease or the different kinds of wild Ribes, and were not familiar with the effective methods of their removal. Without this knowledge control could not be accomplished. It was to meet this need, and thus assure continued production of an essential timber crop that the federal Department of Agriculture, in 1922, entered into the present cooperative eight-year control program.

Under this program the Department discharges its responsibilities by furnishing county or district blister rust control agents to give pine owners the necessary expert advice and local leadership needed to secure the application of adequate control measures. The cooperating states under agreement with the Department give administrative direction to the work and furnish supervision to guarantee effective removal of the bushes. The land owners (individually or by town appropriation) cooperate with the state by furnishing the labor for the eradication of Ribes on their properties.

This arrangement has resulted each year in bringing forth increased expenditures within the state from the constantly growing volume of local cooperator

This is the logical result of the principle which has governed our cooperative work from the beginning, namely, that every dollar expended under our co-operative agreement must produce the greatest possible returns in acreage and value of protected pine. The effectiveness of the federal dollar under the present plan is measured by the amount of local cooperation it produces in each state. That is the proper gauge by which to judge the results of the work done by the federal agents.

Calendar of Work. Time is money and we must budget our time as well as our funds. Lost motion is something with which we all have to contend. To avoid this so far as possible, each one in the organization needs a calendar of work for the year and for the month. It is the plan of work boiled down to specific jobs which must be accomplished each season and each day. The time of coldest weather and deepest snow is the season for planning, for working out schedules, and for preparing educational material for use in other seasons. Then follows the season for perfecting the details of the organization so as to get the maximum advantage of the brief period when Ribes are most easily found and up-rooted. It is the time to line up pine owners who have already promised to eradicate Ribes, and to train foremen and crews in the details of improved methods of work. Every detail must be ready to start eradication work full blast, with smoothness and precision, when Ribes first come into leaf. The summer season is occupied with Ribes eradication, supervision and systematic checking, and some educational work. The fall and winter is the time for the bulk of intensive service work and extensive educational work. The big increase in acreage in 1925 must come from educational activities done next fall and winter. To fit in all of these varied activities each of us needs a calendar of work.

Coordination. The plan of work must also provide for fitting each man's job into its proper relation with the organization. We are all cogs in the machine and each cog must mesh; the leaders must see that there is no friction or lost motion. In this respect we can all improve in arriving at decisions and acting promptly, and in keeping each other thoroughly informed. Plans must keep up with the calendar and the way to do this is to keep the desk clear and the mind clear. Your delay means delay all the way down the line and robs the organization of the spirit of accomplishment. Last year we adopted a plan for assisting in the coordination and development of the cooperative field work by use of blister rust specialists. In prosecuting the eight year program, some such plan as this was essential to stimulate and assist the efforts of field men in getting their work done. Is the plan tried out in 1923 the best for this purpose and if not how should it be changed or modified to secure most effective results? The Office of Blister Rust Control is responsible for the technical proficiency of the blister rust control agents and the general effectiveness of accomplishments under their leadership. In these or any other duties performed by the specialist it must be realized that the specialist is an assistant to the pathologist in charge of the Department field work under the control program and that he is primarily accountable to that officer (Mr. Filler). The State Cooperator is at liberty to call upon the specialist for emergency or special duty at any time and the latter will make every effort to carry out the assignment. I ask for frank discussion of this matter and for suggestions as to how these men can best aid in carrying out the cooperative control program.

Cooperation. We have many cooperating agencies in our work and we must plan to foster and fully utilize this big asset. We can get much more help from the public if we go after it. We can get valuable assistance from associations, from schools and other organizations if we outline things worth while for them

to do. Particularly, we should strive to enlist the younger generation in our cause; many of them will soon be pine owners, and also through them we reach their parents. But any work with the schools should be carefully mapped out in cooperation with the Superintendent of Public Education and the county school authorities.

We have sympathetic and efficient cooperators in the Agricultural Extension Service. The Extension forces have already rendered real aid to our program of work and can be depended upon to do much more. Our job is so big and so urgent that we must center our attention completely on it. Where we use Extension methods in our campaign, we must learn to use them to their full effectiveness. The Extension Directors and county agricultural agents will help us mightily in this if we advise with them frequently concerning the specific things which they can do to aid the cooperative work.

In spite of our common and deep interest in forestry and its many imperative needs we are restricted by the urgency of our work and by law from doing other than blister rust control work. Some misunderstanding of this principle has existed in regard to our relation to farm forestry. Undoubtedly, the State Forester and State Director of Extension can arrange for our agents to be supplied with and use reliable data on the care and management of white pine where this will aid in accomplishing blister rust control. The point is that the blister rust program must be speeded up and the output doubled. The principal contribution we can make to forestry is to make blister rust control an outstanding example of successful cooperation.

Pine Survey. At the Amherst meeting in 1917 I urged that each cooperating State make a survey to determine the location, extent and character of the commercial pine, young growth and potential pine areas in the State. The survey has been

completed in Connecticut and Rhode Island. It should be pushed to completion in the other states, in order that we may do more effective and intelligent planning for the completion of our program by 1930. The data now on hand should be made available at once and definite plans laid to rapidly complete the survey. It is one of the best sources of material for educational work. It is absolutely essential to real planning of control work. It is highly desirable that the data collected by each State be as detailed and uniform as can be arranged but this should not delay getting this job done. We greatly need this data and we should also plan to get more information as to the rate of blister rust infection in the different localities. It would be well for us to broaden the scope of this work and call it a control reconnaissance survey.

Field Investigations. We have secured sufficient facts to convince ourselves that the 600 to 900 foot Ribes-free zone is adequate to protect the pines from the rust. But we need more extensive studies to secure an abundance of data that will convince critical observers. The facts can be obtained and are needed in the educational work. Mr. Posey is in charge of summarizing the studies made by the Office of Blister Rust Control to date. We shall be ready to begin new studies this summer and desire advice from this conference as to where we can best make such studies and how they can be made most helpful. Each State established demonstration control areas in 1916 and 1918. These areas should be carefully reworked for Ribes this year and the data recorded so as to be comparable with the original data by forest types, etc. The States should determine the rate at which Ribes re-establish themselves on these areas as their contribution to investigative work.

Policy Governing Eradication of Cultivated Ribes*.

Each state should follow the lead of New York in defining a definite

* See notes by Conference Secretary at end of this report for action taken by Conference on this matter.

policy regarding cultivated Ribes. This policy should deal with the following points:

1. Declaring the cultivated black currant a public nuisance.

2. Designation of "fruiting currant districts."

3. Complete eradication of cultivated Ribes in control areas and prohibition of further planting.

We believe such a policy would help to eliminate the difficulties which some states are experiencing in the eradication of cultivated red currants. All States should maintain uniformity with respect to the width of the Ribes-free protective stip around pine stands in control areas. We had experience with the opposite policy in the beginning of our work and found it wholly unsatisfactory. Areas in which Ribes are eradicated to protect pines should be officially-designated control areas and their boundaries definitely established by posted or published notices. This gives the proper basis for exercising regulatory authority when necessary, gives currant owners notice that they are within a control area and exerts an educational influence on the public. The posting of the boundaries of control areas is of special value in sections where the control area is small, as in the case of an individual pine lot. It is also recommended that the standard width of the Ribes-free zone be maintained at 900 feet and that a 600 foot zone be used only in such areas as the State Cooperator may designate after ascertaining the field conditions and consulting with the Office of Blister Rust Control. Ribes should not be permitted to remain inside the boundaries of a control area except where they are growing in a properly designated fruiting currant district whose boundaries are defined within the control area. Currant-growing districts should be established only after due consideration is given to the public interest in maintaining pine production, to the wishes of the majority of residents in the area, to the value of

ornamental pines, and to the reseeding of adjacent control areas to Ribes. Our policy should aim at continuous control areas of large extent within which currant-growing districts are set off where it is determined that currants are and will probably continue to be more important than white pines.

Summing up, our goal is to secure protection of existing pine areas in the Northeastern States by 1930. Our aim is to so thoroughly convince pine owners of the necessity of systematic and continuous control work so that continuous and increased pine production will be assured. I am well aware that success does not come from planning alone. Success is largely dependent on a high quality of enterprise and initiative that defies analysis. But planning our work carefully requires thought and that, with devotion to the cause that we all have, will enable us to protect the required one million five hundred thousand acres each year.

WHAT THE PAST YEAR HAS SHOWN IN THE DEVELOPMENT OF THE COOPERATIVE CONTROL PROGRAM.

by
E. C. Filler

Office of Blister Rust Control,
United States Department of Agriculture

- - - - - - - - - - -

1923 was the banner year of accomplishment in blister rust control work. During the season a total of 895,986 acres were cleared of 8,173,960 wild Ribes at a per acre cost of 18.1 cents. Every state in the Northeast covered a larger acreage than during the preceding year. The rate of increase in area worked over 1922 by states is as follows: Mass. 214%, R. I. 172%, Conn. 127%, Vermont 86%, Maine 77%, N. H. 49%, N. Y. 40%. The average increase for all states is 86%.

During the period 1918 to 1923 inclusive, a total of 29,624,631 wild Ribes were destroyed on 2,439,443 acres at an average cost of 27.7 cents per acre. The average yearly per acre cost has been reduced from 74 cents in 1918 to 18 cents in 1923. The area covered in 1923 is about one third of the total acreage worked since 1917.

The question naturally arises, what is the present status of our work? I will endeavor to answer this question by Table I.

TABLE I — Present Status of Control Work in the Northeastern States.

State	Estimated acreage white pine growth	Total acreage eradicated of Ribes 1917-1923	Acreage eradicated of Ribes in 1923	Estimated pine acreage protected(66 2/3% of eradicated area)	Percent pine area protected
Maine	3,000,000	712,411	336,452	474,941	15+
New Hamp.	2,500,000	1,042,846	268,237	695,231	27+
Vermont	86,000	62,680	25,190	41,787	48+
Mass.	775,000	434,173	201,931	289,449	37+
R. I.	125,000	154,305	31,308	102,870	81+
Conn.	(75,000 in Litchfield Co.)				33+ Litchfield Co.
Conn.	190,000	37,407	14,062	24,938	12.9
New Eng.	6,676,000	2,443,822	877,180	1,629,216	24+
New York	1,500,000	224,903	15,459	149,936	10-
New Eng.& New York	8,176,000	2,668,725	892,639	1,779,152	21+

TABLE I. Continued:-

State	Pine acreage still to be protected.	Total area still to be eradicated (allowing 1/3 acreage for protection strips).	Years to complete project.	Yearly acreage needed to complete project.	Ratio of necessary ann. acreage to 1923 acreage.
Maine	2,525,059	3,787,589	6	631,265	1.9 Times
New Hamp.	1,804,769	2,707,154	6	451,192	1.7 "
Vermont	44,213	66,320	2	33,160	1.3 "
Mass.	485,551	728,387	3	242,796	1.2 "
R. I.	22,130	33,295	1	33,295	1.1 "
	50,062		3		
Conn.	Litch. Co.	75,093	(1 Agent)	25,031	1.8 "
New Eng.	4,931,784	7,397,838	6	1,232,974	1.4 "
New York	1,350,064	2,026,097	6	337,683	21.8 "
New Eng.& New York	6,281,848	9,423,935	6	1,570,656	1.8 "

In analyzing this table the following points should be noted:

1. No future re-eradication work is considered.

2. The acreage of white pine growth is merely an estimate made by the state officials. Only two states, Conn. and R. I. have accurate pine surveys. However, fairly accurate figures have been obtained in Vermont and N. H. from general surveys.

3. The acreage eradicated of Ribes includes protection strips around pine areas, also a small amount of re-eradication work.

4. The pine acreage covered to date in each state is based on 66 2/3% of the total area eradicated of Ribes. This percent figure was taken as representing a conservative average for all states.

5. The total area still in need of Ribes eradication is based on the sum of the pine acreage yet to be worked and an additional 33 1/3% allowed for protection strips.

6. Although Connecticut has 190,000 acres of pine - 98% of it, outside of Litchfield County, is naturally protected from blister rust, due to scarcity of wild Ribes. However, in Litchfield County, there is about 75,000 acres of pine in need of protection.

On the basis of the above table, it will take three States, Maine, N. H., and New York, the full remaining six years of the control program to complete the initial eradication of Ribes. But to accomplish these results, Maine must cover 1.9 times as much acreage this year as last and maintain that same rate of progress during the next five years, while in New Hampshire and New York, the rate of increase must be maintained at 1.7 and 21.8 times respectively the 1923 figures. The other four states should complete the initial Ribes eradication of their control program in from one to three years. However, in Vermont and Mass., it may take an additional year or more to cover all the scattered pine lots. In Rhode Island it will

require another year to protect the remainder of the potential pine land. In order to complete the entire project as outlined it will be necessary for all states to increase the yearly acreage cleared of Ribes above that done during 1923. There is also need for a varying amount of re-eradication work in all the states.

The figures given above can be no more accurate than the estimated pine acreage. This statement clearly shows the need of accurate pine surveys. In order to get some fairly definite figures within a short period it might be advisable to have the blister rust agents make a rapid survey of white pine in their districts. From their knowledge of local conditions, they could give a fair estimate of the amount of pine land in each town and the acreage placed under control. Special scouting could be done in towns where little is known about the amount of white pine and check figures could be obtained from assessors and others. Such a survey could be made immediately following town meetings. The details should be carefully worked out in advance, but the plan ought to be so simple that the work could be done within about a months time. Such figures would be of much greater value than anything we now have, and would be of great help in better organizing the control work.

Educational Phases of Blister Rust Control Work

For County or Larger Unit:

This work when stripped of its ornaments is more or less like plain advertising for the purpose of explaining to the public the blister rust menace and how to combat it. Various means were used during the year. The roadside demonstrations were, without doubt, the most striking feature of this work during 1923. However, many new and valuable ideas for arousing interest were developed such as gooseberry bush pulling races, gooseberry leaf guessing contests, novel exhibit pieces as county infection maps, infected pines and Ribes, unique posters, etc.

What has been accomplished? Table II gives a summary of this work for the twelve month period ending December 31, 1923.

Table II

Educational Features of blister rust control work	No. for all agents	Yearly No for ave. permanent agent	Monthly No. for ave. permanent agent	Lowest state aver per perm. agent	Highest state ave. per perm. agent	States above average
Meetings	733	20.2	1.7	6.0	32.2	Maine & N.H. (2 out of 7)
Exhibits	582	15.6	1.3	6.0	24.0	Me., N.H., Vt. (3 out of 7)
Publications Items	51,462	1,372.1	114.3	516.0	1,583.0	N.Y., Mass., N.H. (3 " " 7)
Published Posters	1,203	33.8	2.8	21.8	39.3	N.Y. & N.H. (2 " " 7)
Placed	6,499	177.0	14.7	13.4	331.5	N.H., Vt., N.Y. (3 " " 7)

This summary shows there is a wide range in the amount and kind of work. Some states are emphasizing one thing and some another while others are doing little along any phase of this work. An analysis of the individual agents work is even more striking. For instance, one agent during the year had no exhibits, another only 2 meetings, while a third had 74 meetings, placed 63 exhibits, had 44 initial interviews, and 134 follow-up calls, and supervised from 6 to 11 crews during the field season. Towns and individuals in this man's county appropriated $12,000 for control of Blister Rust. Admittedly conditions vary in the different districts, but does it not require some explanation as to why there should be such a wide range in the accomplishments of our agents? Is it because of a hit and miss method of work? Perhaps there is need for special educational assistants as will be outlined by another speaker or should the blister rust specialists do more along this line? Should more of this general blister rust educational work be handled direct from the state and federal offices by following up the agents leads with a series of letters, etc., which will make it easier for the agents to get definite results? Without such a procedure are we giving the agents the support they need? Surely there is a real need of definite plans and organization for this entire work.

The blister rust control agent has only one project and he is more or less of an expert in this field. The state blister rust leader acts not only as supervisor of the agents work, but also as a specialist in that he furnishes part of the subject matter, and plans and organizes the cooperative control work. Our control program demands the maximum of efficiency in the minimum of time. Our agents are for the most part trained foresters but many of them are short in one or another phase of the control work, especially in its educational aspects. There is not sufficient time to make them experts in these lines, but by helping each other we will improve our work. These thoughts may be of value in studying some of the papers which will be read later.

For the Town or Larger Control Unit:

The general educational work within the county spreads the gospel of blister rust control and paves the way for the more intensive educational features of the control program. This latter type of work produces the town and individual cooperation which is essential in order to accomplish the desired results. Where do we stand in this work? Table III summarizes this work for the twelve months period ending December 31, 1923.

Table III

Intensive Educational Features of Control Work	No. for all Agents	Yearly No. for ave. permanent Agent	Ave. No. per working day for ave. perm. Agent	Lowest state ave. per perm. Agent	Highest state ave per perm. Agent	States above average
Initial Interviews	14,769	358.0	1.2	141.9	736.0	Mass., Me., N.H. (3 out
Follow-up Calls	5,590	145.8	.5	76.8	256.1	Mass., N.H., Vt. (3 " "
Disease & Damage Dem.	3,238	68.7	.2	16.4	115.8	N.H., Vt., Me. (3 " "
Attendance Control Meth..	6,615	158.3	-	21.0	301.9	N.H. & Vt. (2 " "
Demonstrations	1,888	36.4	.1	8.8	76.1	Mass., Me., Vt. (3 " "
Attendance	3,119	67.1	-	9.0	99.6	Vt., Mass., Me. (3 " "

The table shows there is a wide range in the amount of intensive blister rust educational work done in the various states. Due to the varying state conditions there is sure to be a difference in the amount of work performed along this line. However one would scarcely expect to see such a wide range in the volume of such work. Based on individuals, the range is even more pronounced. Should we be satisfied with only 1.2 initial interviews and .5 of a follow-up call per day per man? I believe we can speed up this work in the following ways:

1. Better planning and organizing of the work so more people can be seen per day.

2. Eliminate hit and jump work as well as excess travel, and decrease lost motion.

3. Confine scouting to control reconnaisance in the district that is to be cleaned up immediately.

Cooperation in Applying Control Measures.

During 1923, the agents produced the greatest amount of cooperation ever obtained in blister rust control. In New England and New York, 1968 persons expended $40,992.67 and 128 towns spent $40,140.11 in Ribes eradication work, or an increase in amount of funds spent over 1922 of 67% for individuals and 120% for towns. In addition several hundred persons cooperated in the removal of cultivated bushes. A total of 115 persons eradicated wild Ribes from 9,144 acres without immediate supervision. The increase in the amount of town funds used during 1923 over the preceding year was 524% in Maine, and 120% in N. H. But in Conn. there was a decrease of 79%. The amount of individual funds expended in 1923 increased over that used in 1922 as follows: Conn. 362%, N. Y. 196.5%, Mass. 114%, Me. 98.5%, Vermont 31.7%. However, N. H. had a decrease of 4.7%. A total of 55,074 cultivated Ribes were destroyed, but only $578.20 compensation was paid.

Summary of Distribution of Agents Time.

During the period March to December 1923, the proportion of time spent on the various phases of control work by the average permanent blister rust agent was as follows: education 28.3%, travel 21.6%, office 17.3%, supervision 16.4%, scouting 12.7%, miscellaneous 1.3%, mapping 1.1%, eradication 1.0%. The total time expended on this work per man averaged 1,835.5 hours or 230 hours per month, or almost nine hours for each working day.

Comparison of Total Costs of Control Work During 1920 and 1923.

Based on total expenditures is the control work as efficient under the new plan of work as under the old? The last full year of control work under the old plan was 1920 and 1923 is the first full year under the new policy. A comparison of the total expenditures for cooperative blister rust control during these two years is shown in Table IV.

COMPARISON OF ALL COSTS OF BLISTER RUST CONTROL WORK IN 1920 AND 1923.
(All state, town, individual and federal $ for $ moneys included).

Table IV.

Year	District	Acreage	No. Wild Ribes Estimated by Crews	No. Cult. Ribes	Total State Expend.	Total Govt. Expend.	Total Ind. Expend.	Total Town Expend.
1920	New Eng.	263,600	3,548,150	25,889	$26,578.83	$54,253.93	$ 6,750.49	$8,775.00
1923	"	877,180	7,063,300	54,707	56,502.05	92,647.62	31,444.04	40,140.11
% Increase or Decrease		+232%	+ 99%	+111%	+112%	+ 71%	+365%	+357%
1920	New Eng. & New York	270,657	4,243,983	25,936	49,902.21	85,491.48	9,243.43	8,775.00
1923	"	892,639	7,969,917	55,074	114,297.81	117,787.06	40,992.67	40,140.11
% Increase or Decrease		+229%	+ 87%	+108%	+129%	+ 37%	+343%	+357%

Table IV. Continued.

Year	Total Expend.	Amount funds spent by coop. for each acre eradicated. State Amt.	State %	Govt. Amt.	Govt. %	Ind. Amt.	Ind. %	Town Amt.	Town %	Ind. & Town Amt.	Ind. & Town %	Total for all Amt.	Total for all %	Eradication cost Per acre.
1920	$ 96,358.25	$.10	27.9	$.205	57.2	$.02	5.7	$.033	9.2	$.053	14.9	$.358		$.229
1923	220,735.82	.064	25.6	.105	41.8	.036	14.3	.046	18.3	.082	32.6	.251		.132
% Inc. or Dec.	+129%	-36%		-49%		+75%		+39%		+55%		- 30%		- 42%
1920	153,412.12	.184	32.6	.315	55.8	.033	5.9	.032	5.7	.065	11.6	.564		.313
1923	313,217.65	.128	36.5	.132	37.7	.045	12.9	.045	12.9	.090	25.8	.350		.179
% Inc. or Dec.	+104%	-30%		-58%		+36%		+41%		+38%		- 37%		-43%

In analyzing this summary one should consider the following points:

1. The number of Ribes is based on crew estimates, but all other figures are accurate.

2. The total state expenditures includes all state money (state appropriation, nursery inspection funds or misc. monies) used on cooperative control work, including all overhead charges.

3. The individual expenditures are confined to money spent by individuals, associations or firms on cooperative control work.

4. The town expenditures include all money expended by towns on cooperative control work.

5. The federal expenditures cover all $ for $ federal money expended on cooperative control work in the listed states.

Comparing the work done during the two years one will note a much larger amount of work was performed during 1923. The increase in efficiency under the new plan of work over the old is shown by a direct comparison of the per acre values during the two years. In New England there is a reduction of 42% in the per acre cost of Ribes eradication, while the total cost of all work per acre was reduced from 35.8 cents to 25.1 cents or a reduction of 30%. The figures also show the cost to the States and Government respectively was 36% and 49% less per acre in 1923 than in 1920. However, the individuals in 1923 expended 75% more per acre than in 1920 and towns paid an increase of 39%. Comparing the proportionate part paid each year by the various cooperators shows the states expended practically the same proportion of the total costs each year. However, the Government paid a less proportionate cost in 1923, but the town and individuals on the other hand, paid over twice as high a proportionate part of the total costs in 1923 as in 1920. Combining New York with New England cuts down the proportionate part paid by the towns and individuals and increases the amount expended by the state. The total cost for all cooperators is reduced from 56.4 cents to 35 cents per acre or a decrease of 37%, which shows the practicability of the present plan of work.

In addition the public is being educated to recognize the disease, to apply control measures and to carry on the bulk of the re-eradication work. Indirectly the agents are stimulating an interest in forestry, especially reforestation and protection. All this is being accomplished at a considerably less proportionate cost than in 1920.

THE BASIC FACTOR IN THE SUCCESS OF A COOPERATIVE CONTROL PROGRAM

by

G. H. Collingwood,
Office of Cooperative Extension Work,
U. S. Department of Agriculture.

Someone has remarked that there are three kinds of writers, - those who have their thoughts completed before attempting to set them down on paper; those who have an idea and by writing are stimulated to think more deeply into the subject; and those who never think. I trust that none of us fall in the third group. Probably most of us will recognize our place in the second group, and are striving to be among those few who have their thoughts crystallized before attempting to set them down on paper. The preparation of a plan of work will help one to marshall his thoughts, and thereby organize his work to the best possible advantage.

A plan of work should aid in reducing our waste motion to a minimum by coordinating our efforts toward a definite goal. It must be flexible, for no one is a prophet and the unforseen is continually occurring. The plan may be for only a year but there should be ample opportunity for recording progress, and so far as possible of visualizing it. This will lend continuity to the work, and form a new plateau of progress from which new plans can be made. Thus can the work be continued toward the ultimate goal, which in your case is to satisfactorily secure the general application of blister rust control measures by pine owners within the next six years.

When we speak of a plan of work we naturally presuppose that it will be a written plan. A leader may have a plan in mind, but unless he crystallizes it on paper, or at least confides it to his associates it stands in

constant danger of being lost. Plans are the result of thought, and thought ranks among the rare jewels, therefore well thought-out plans should be given reasonable permanence by being set to paper. A few carbon copies mailed to others in the same work will often bring out constructive criticism, which gives the advantage of the thought of several minds without the expense of a conference. The idea is perhaps best brought out by the following:

Jones has one dollar,
Smith has one dollar,
They exchange dollars,
Then Jones has one dollar and Smith has one dollar
But if Jones has one idea
And Smith has one idea,
And they exchange ideas,
Then Jones has two ideas and Smith has two ideas.

No thinking person will doubt the value of the architect's plan, or of that of the engineer. Our manufacturing firms pay large sums for the services of men who will plan and carry out their selling campaign. Men tell me that the hard job, and the one for which they claim the greatest credit, is not so much the selling of the goods, as it is the preparation of the plan by which the goods are to be sold. And yet the plan that does not result in selling goods, is not worth the paper that it is written on. It is a means to an end, - not the end itself. Plans and results are one to the other as the blossom is to the fruit.

Back of a <u>plan</u> which after all is merely the detailed description of a proposed method of getting results, is a general <u>program</u>, and back of that is a fundamental <u>policy</u>.

The <u>program</u> is a brief outline of the subjects to be embraced, and perhaps the order in which they will be pursued. It may ramify as the branches of a tree.

The policy is as stable as the roots and represents a settled course which has been adopted, and which is intended to be followed.

To be specific, it is the policy of the Department of Agriculture to conduct its extension education through the channels of the state agricultural colleges and their extension services. This explains why the Directors of Extension, in each of the several States where blister rust control work is conducted, are parties to the cooperative agreement. The entire Agricultural Extension program is a broad one and includes a range of subjects from Agricultural Engineering to Weed and Plant Disease Control.

The best program is one which is developed with the aid of the local people. In that way they are effectively interested in the aims and methods of the work, and can be expected to lend more active support to it. Through the building of a community program the people are taught to recognize their problems; to recognize them as being capable of solution by the community: to accept responsibility, and to assume leadership in their solution. Some blister rust control agents are taking advantage of the aid which has been made available through the Extension Service, and are building their local plans along these lines.

The plan of work is based upon a knowledge of the problem and is prepared for the purpose of its solution. Kipling has written a verse which any plan of work should include:-

"I have six honest serving men
(They taught me all I know),
Their names are What and Why and When,
And How and Where and Who."

What is your job and what is the problem with which you are confronted, - in short, what is blister rust? Where is it located and where are the ribes? Why is it so important that this disease be controlled? How is it going to be

done? When will the job have to be finished? Who will do it?

A plan needs to follow no standardized form, but it should bear in mind the steps by which an individual is impelled to accept any new idea:-

First, you must secure his interest and attention. In this respect the blister rust agents are particularly fortunate in having available attractive posters, bulletins, and leaflets, and interesting as well as instructive movies and slides. More and more the examples along the roadside are attracting attention. It should be a part of any plan to attract attention to blister rust by means of permanent roadside demonstrations.

You must win the confidence of the community and stimulate a desire on the part of white pine owners to follow the instructions which you are prepared to give. Your own personality counts for a great deal here, - also the character of the men who have already recognized the necessity of eradicating Ribes. The desire to control the disease may be brought about by demonstrating that white pine is valuable and that it is actually menaced. Furthermore, that with its destruction will go a tremendous amount of wealth and a source of beauty and recreation.

Having gone this far, your work is a failure unless you are able to stimulate them to decisive action which will result in the control of the disease.

Any discussion of this kind is valueless unless it can be applied to the subject in hand. Accordingly, the following suggestions for a blister rust control campaign may prove helpful:

a. Preliminary publicity. This is a subject with which the men in blister rust control are already familiar. The county should be informed of the blister rust menace and the comparatively easy methods of control. Such work is now being done by means of news notes to the press, posters, circular

letters and illustrated cards sent to a large mailing list, - also by lectures and personal visits.

b. Preliminary conferences by the agent, with leading farmers, forest owners, lumbermen, farm bureau committeemen to acquaint them with the blister rust menace, the need for taking control measures and to discuss plans for a blister rust campaign.

c. Organization meeting. News notes and circular letters should be sent out inviting leaders to a blister rust control meeting. Where the farm bureau is active, community project leaders can be used to advantage. Otherwise a committee of from seven to fifteen leading pine owners should be appointed to have charge of the campaign. Their general duties can be taken care of by special committees and should include:

1. Preparation of a detailed plan for carrying out the campaign in the county.

2. Arrange the budget and secure finances.

3. Arrange for making a pine survey with the aid of appointed committeemen. This should include a list of pine owners which can be used in securing pledges to eradicate currants and gooseberries.

4. Aid in clean up, stage Ribes eradication contests, etc.

d. Publicity should be given to the plans for the campaign; personnel of committees; results of survey; and recommended control measures. Also by means of exhibits, window displays, posters, illustrated circulars, and signs posted on control plots. Publicity should be continued through the campaign in order to keep the public in touch with the progress of the survey; and the number of pledges secured as compared with the number of owners listed. Circular letters may have to be sent to committeemen urging them to speed up the survey and secure more pledges.

e. Pledges to eradicate currant and gooseberry bushes should be secured from as large a proportion of the land owners as possible. Some of these can be secured at meetings where slides, motion pictures or specimens are displayed also at demonstrations and at tours. A few may be secured by correspondence, but by far the greater number will be the result of direct effort on the part of the blister rust agent and his committeemen. To avoid duplication and to insure covering the entire county the owners who pledge to eradicate should be recorded and checked on the list of land owners.

f. Follow up of all who pledge and a report on those who clean up their property.

g. Clean up by hired crews in order to make the entire area free.

h. Banquet (or some other form of celebration) to be staged by the farm bureau or the committee to discuss results and lay plans for the next year.

If this is to be done in a level headed, consecutive manner, - if you are going to avoid jumping about the county, wearing out automobile tires and wasting gasoline, - to say nothing of your own energy, - you must have a plan to follow. It should be flexible to allow for emergency work, but always with certain definite goals to be strived for. Or it may be further developed upon the basis of time and tools. This "time-tool" method of planning has the advantage of giving continuity to the work and holding constantly before the worker a definite goal of accomplishment. It may be enlarged as a chart and thus kept continually in sight. Most of us need to keep our goals in sight.

Such a plan carried out in conjunction with a good system of records will allow one to take stock occasionally and to know not only where accomplishments have been made, but also wherein the work needs to be hastened in order to carry through on schedule time.

OUTLINE OF A PLAN OF WORK FOR FORESTRY PROJECT
1923

I. Projects to be emphasized.

II. Organizations through which these projects will be emphasized.

A. Community.

B. County.

C. State.

III. For each project to be emphasized, there should be included:

A. Purpose, including facts determining the selection of the project.

B. Statement of the selection of areas, or why the project is being carried on in the counties in which it is.

C. Method of procedure, or plan for conducting the project.

D. Literature or illustrative material to be used -- as publications, charts, lantern slides, etc.

E. Goal. A goal may be of three kinds:

1. Quantity.

2. Time.

3. Data.

F. Results.

1. How they are to be secured.

2. How they are to be measured.

IV. Calendar of work, showing --

A. The types or kinds of office and field work to be done each month.

B. The distribution of field assistance to each county by months.

The Responsibilities, Duties and Organization of the State Blister Rust Leader.

by
C. C. Perry,
State Leader Blister Rust Control, Massachusetts.

His Responsibility:

The State Leader is ultimately responsible for the completion of the present campaign to control the white pine blister rust in his state within the eight year period as agreed upon by the several cooperating agencies. This can only be accomplished by his having available, an appropriation commensurate with the needs of the work. Given such an appropriation the responsibility is his, to so use the funds intrusted to him for expenditure, as to organize, develop, and supervise the performance of demonstration and control work in a manner that will assure the accomplishment of our aim - the control of blister rust - within the eight year period and by getting the greatest value for the funds expended. In short, the responsibility of the State Leader is to accomplish the control of this disease within his state, economically as well as effectively.

His Duties:

The duties of a State Leader can be divided into three types; namely, administration, supervision, and cooperation.

1. Administration. The State Leader is usually the responsible officer in the state; he is virtually the administrative head of the work. As such he has office duties that must be performed. The degree to which these duties will tie him to the office depends first upon the amount of work the blister rust organization in the state is doing, and finally upon the assistance available to him for the discharge of these duties. The administrative duties of the State Leader include the general planning of the work of his organization as a whole, the budgeting of funds to secure the most efficient results, the

keeping of accurate records, and the making of proper reports. The Leader must also study problems that arise in the work, investigate, develop, and apply new ideas, those of his own and those of others, for the improvement of the work.

2. Supervision. The State Blister Rust Leader being ultimately responsible for the success of the project must keep in close touch with the District Agents. This touch can only be obtained by personal visits and contact with the men individually in the field or by conference with the men assembled. It is the duty of the Leader to assist, counsel with, and inspire the personnel of his organization at all times and to the best of his ability. The time that can be devoted to this duty, depends primarily upon the extent to which his administrative duties take up his time.

3. Cooperation. It is the function of the State Leader to cooperate to the fullest extent possible with state or private organizations that have in any way an interest in blister rust control, particularly those allied to forestry and agriculture. The degree to which the State Leader can attain success in his endeavor in this respect depends upon his own personality, upon the personality of the leaders of the cooperating agencies and upon the availability of the facilities of the other organizations. Much of the success of the blister rust work in the future will doubtless depend upon the extent to which we are able to secure and make use of the services of these allied agencies without shifting responsibility which must be maintained in the blister rust organization itself.

Given these three major duties, it is the real problem of the State Leader to know how to so apportion his time, effort, and attention that he will best serve the interests of those to whom he is responsible. This is no mean problem! With what success are we solving it?

His Organization:

The character of the organization working under the State Leader depends of course upon the volume of the cooperative blister rust control work within the state and the funds at his disposal.

Where the project requires from five to ten district Agents, a State Leader should most certainly have the following assistance:

1. The full time service of a stenographer and part time of an office clerk.

2. An assistant, to act as a publicity agent to assist in the futherance of the educational work of the district agents and to assist them during the eradication season with such matters as the training of the field forces, the conduct of demonstrations, the placing of exhibits, etc.

3. A checker of control work is essential for the period of the Ribes eradication season.

The organization within each Blister Rust District should also include the following:

1. A district Agent, who must be held entirely responsible for all blister rust work within his district.

2. An assistant, at least during the Ribes eradication season to act as a supervisor wherever six or more field units are employed.

3. Foremen and scouts in such number as may be required to perform Ribes eradication work effectively and efficiently.

This in brief, is an outline of the business of the position of State Blister Rust Leader. The responsibility is the same in each state, the duties must necessarily vary with the nature of the problem involved, the accomplishments will depend first upon the appropriations which are granted for the use of the organization, second, upon the character and efficiency of the organization he directs, third, upon the cooperation which he is able to obtain from allied organizations and always upon his own personality and ability.

Plan of Work for a Blister Rust Control Agent.

by

Dr. H. H. York,
Forest Pathologist, New York Conservation Commission.

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Since I am not a Federal Leader in Blister Rust Control, and at this moment I assume this is a Federal Leaders program, I certainly feel that my place is on the side lines. The Federal Leaders here assembled have had far more experience than I in the matters which are to be discussed. My connection as you will know with White Pine Blister Rust has been almost entirely with the scientific investigations of this disease. Fully conscious of my own shortcomings, I feel it is not for me to discuss the matters outlined in this part of our program. I assume the Federal Leaders here assembled have long since cut their wisdom teeth and are just as conscious as I am, if not more so, after their years of experience, of the vital importance of making and maintaining contacts, planning, directing, budgeting, training. Now if I am expected to say something new someone will return to his camp disappointed. There is no intent to criticise, not even to preach, tho the less worldly inclined may think so, but judging from my own experiences and observations during the past twelve months it seems that our powers of mental vision have been at times, to say the least, strikingly similar to those of the blind men who went to see the elephant. All of us undoubtedly believe in the worth-whileness of Blister Rust Control. Our daily needs are such that we are not bound to our work by our salaries. There must be a deeper motive than money for us to stick to our jobs or else we would have long ago become plumbers, carpenters, janitors, etc. where the hours are much shorter, our slumbers more peaceful and the dangers far less hazardous. I assume we are all trying to learn and to serve. There "remaineth yet much land before us". We therefore need new light to be able to peer far beyond our present horizon if we are to cross the goal line by the

end of the coming six years. If we can return to our respective scenes of action with a rejuvenated faith in the worthwhileness of our work, a broader conception of the dignity of our jobs, a new inspiration and determination to render a greater and more effective service, we will depart richly paid for the time we have been at this Conference.

Contacts. In Blister Rust Control our business is to be field leaders, not office habituates. We should be perpetually makers and maintainers of personal contacts. First of all we need to get into closer relation with ourselves and get in shape to apply a more magnetic touch to the ones we lead and the things we are yet to do. Last week I visited the New York blister rust Agents. As I listened to them relate the experiences which they have encountered as the result of the former contacts made by fellows employed in Blister Rust Control and other State and government work, I have become more deeply convinced than ever of the absolute necessity that if we are to succeed in breaking down the barriers of distrust and imagined grievances which hamper us today, we have got to develop and maintain the highest morale possible among our field men. How can a high morale be created and kept if we fail to keep in a close personal contact with our men. It can't be done by never calling on our men out on the front or seeing them only once or twice a year and perhaps then only in conferences. The State Leader should see the blister rust agents at least once every month and find out first hand what they have been doing and how, discuss their successes and failures and learn the causes of the same. Suggest how they can improve their weaknesses, learn what their problems are and if necessary do what you can to help the agents solve them. Supply the Agents with new ideas, encourage and inspire and by all means commend where commendation is due. It will be a serious mistake when we try to find out all the agent knows and offer him nothing in return. When we meet our men we

need to think of ourselves in the places they occupy. We are all too much inclined to get our contacts with our field men through the various B.R.E's, expense accounts and personal representatives. We need to bear in mind all the while - nothing is so vital to the morale, the loyalty of our blister rust agents as frequent and helpful personal contacts and we can't accurately and fairly judge our men from the weekly and monthly reports or what others may say. There has been in some States a lack of contact among fellow blister rust agents. They should be brought together at least every two or three months that they may get acquainted with each other, discuss their problems and experiences, and exchange ideas. The more an agent knows about his fellow agents' problems the greater the incentive to master his own. Last week one of our agents suggested that the New York blister rust Agents should have among themselves a sort of circular news letter. I think the idea is good and should be tried. The purpose of this letter is to let each agent know what is happening in the other Blister Rust districts. It is the business of the State Leader to call upon the foremen and crews once a month or more often if possible. The State Leader needs to know the foremen and his problems. Both the foreman and the crew should be made to feel that they are just as much a part of the Blister Rust organization as other men are and that there is more to their jobs than the mere pulling of bushes. Follow the crews in action. Call their attention to any improvements they might make. Study each individual man and show that you are really interested in what the men are doing.

There are contacts almost without number. I believe in calling upon cooperators, getting acquainted with them, ascertaining whether they are satisfied with the service your men have given them. If any man needs to know field conditions in general, it is the State Leader, if he is to understand many of the field men's problems. Further, the leader must be familiar with

field conditions if he is to be of any material assistance in directing the educational work of the agents and the field operations of all his men.

Plans

It seems to me we have suffered much lost motion through a lack of carefully thought out plans. We have doubtless all planned until our domes were a maze of plans. Our success in planning lies very largely with our ability to visualize and the nature of our knowledge of our men and of field conditions. It is a relatively simple matter to sit at our desks and draw up elaborate working plans, but it is a very different matter to put those plans into effect from the office or with only a meager knowledge of field conditions and limited contact with our men. Plans most productive of results cannot be made by pouring over and over again the B.R.E's. If we know what ought to be done, we ought to be able to plan how it should be done. In one state at least Blister Rust Control work has been in progress since 1917. As yet it is not known how many acres of pine there are to protect. Since this is true it is not known whether at the present rate Ribes eradication is being done, the ground can be gone over once on our cooperative eight year control program. It is not known just how much damage Blister Rust has already done in the State as a whole. Thus it is not known whether the present rate of Ribes eradication is sufficiently rapid to cover the White pine land in eight years or is ample enough to cover the ground before the damage from this disease becomes irreparable. This state is New York. Our agents this winter, through tax assessors, forestry committees, are listing the White pine owners with their acreage and financial ability to cooperate. We are beginning to know who's who, and where we are. Enough facts are already at hand sufficient to cause night mares. We know more about what Blister Rust has already done than we did a year ago. We know that there is no data worth mentioning available

on the reestablishment of Ribes from seed and roots of bushes left in the ground and certain other problems in connection with Ribes. We have already begun some of these investigations and will inaugurate more the coming spring. Not to talk of what we are doing I mention these things to illustrate the importance of knowing certain situations which for our work are extremely important in order that we can plan a more agressive and effective campaign against the White Pine Blister Rust. Each agent knows the situation in his state better than any one else. But does he know the things that should be done which are in vital need of doing in order to map out his work as he should do. How often do we really stop to think how our plans and work can be coordinated? In getting the names and addresses of the White pine owners we have an avenue for some very intensive educational work, whereby we hope it will be far easier for the blister rust agent to secure cooperation than it is today. The blister rust agents are beginning to know more about how to go about their interview work. The reaction of our agents to this work has been surprisingly good. One said he did not see at first any particular advantage in this undertaking, but he soon realized what a big asset to him in his work it will be and he together with other agents have already begun to plan the coming season's campaign accordingly. A lot of lost motion is going to be averted.

How often do we sit down and study intensively ours and the accomplishments of our men when we find we are falling short, when it is time to do some more serious thinking and effective planning?

Budgeting

I do not believe we have lived this long without realizing the importance of maintaining a carefully thought out budget. You bachelors may not have felt the pangs of budgeting as the married fellows. If we do not plan and work properly we cannot budget. If I were addressing a group of newly weds or a class of college freshmen my remarks on this subject would be much

more elaborate. I think there is in our work a lot of leakage. Budgeting centers around our knowing the things we should do and how.

Adequate Records

Accurate and adequate records of moneys expended and accomplishments are, as I think you all appreciate, absolutely essential to the success of our work. But don't let them get moldy and by all means beware of recorditis, it will put you to sleep. As you well know accurate records are invaluable in the planning of our work, in budgeting, in our field activities in making reports and in a great variety of other ways. They should be kept so that those who follow us may benefit therefrom.

Reports are seemingly necessary evils, in fact they may sometimes be devils. They should be made when due and be brief and to the point. We are liable to rely too much on them when they come from our men in the field and to overlook the reports which can be obtained through the personal contact method. The reports that I am being called upon to give are in answer to the following: Are your methods of controlling Blister Rust effective? What data do you have on the damage this disease has caused? How much land was covered in 1923? How much eradication in sight for 1924? How do costs of eradication in 1923 compare with those of 1922? The number of initial interviews, follow up calls, talks, are all of smaller magnitude. What I am watching is the reports on acreage in sight for 1924. If favorable or unfavorable find out why. I do not rely on the monthly report sheets, but I go directly to the blister rust agents. I can not guage a blister rust agent or what he is going by his B.R.E's. They tell me nothing about the agents problems, his experiences, the attitude of mind of the pine owners toward Ribes eradication. During the two preceeding weeks our agents conducted an intensive campaign of private interview work. Owing to conditions of weather and roads

they made a very creditable showing, namely, they signed up 2,000 acres for eradication. The agents had been directed to interview men of an evening when they were seated comfortably around their fires. A report from each agent in addition to his weekly report cards is upon my desk, but those reports gave little of what I wanted to know. I've personally and privately interviewed each one with one exception. The reports I got in these conferences gave me far more valuable information than all the written reports the agents could have written. Likewise each agent got something from me which I hope he can use as effectively as the information he imparted me. Unless you can report something back to your men which they can use for the betterment of their work, keep within the cloistered walls of your office. Do not understand I am belittleing written reports, for they have their place. I study them as they come in the office, but my point is this, do not rely on them to the exclusion of the personal interview with the men in the field.

Training, equipping, inspiring the personnel.

As Blister Rust Leaders we are responsible for the training, equipping, and inspiring the men we are called upon to lead. We ourselves possess a certain amount of training. How did we come into possession of the knowledge in Blister Rust Control Work? Did someone higher up than we train us? The nature and the objects of the jobs which we are called upon to perform are not always explained to us, but nevertheless we are expected to do them. A well organized plan on paper was never put into my hands by any chief I have ever had. The first work I did in Blister Rust Control was to survey and map about 9 square miles of land and show the location of the different forest associations. When I asked my superior officer how to go about it, he replied "York that is your job". In addition to the instruments furnished for my work I did receive and have since then an equipment of ideas and suggestions from my chief, which were of an in-

valuable aid to me.

What we ought to be able to do is to take a man, line up the job in a way that he can understand what it is all about, and let him go to it. I do not believe in pushing a man off and leaving him to his own fate. But I do believe in seeing that man as often as occasion demands and discussing his work with him, ascertaining what his problems are, giving suggestions where needed, helping him to visualize the real object and meaning of his work. It is not up to us to sit down and map out in detail a man's work, but we do want to give that man a chance to exercise his own creative powers. What does it matter how he gets results so long as he gets them in a dignified and honorable way? When our men develop ideas and methods of work worth trying, let others know about them. As leaders we ourselves must be able to visualize, to see things as they are including ourselves, if we are to furnish the necessary informational guidance as we should for our men.

You will note I am not laying down a special detailed plan for training our men. If they are the sort of men we ought to have in our organization they will take care of themselves and do what we want them to do, if we ourselves will keep ourselves in training. We should have men in our organizations which are fit and ready for blister rust agents jobs where they arise. We are all agreed an agent should be a graduate forester. In the following, I assume the man has had no experience in Blister Rust work, in fact has never seen the disease. If there are crews making field studies of Blister Rust, first put the prospective agent in with the crews, where he will be under the guidance of the foreman. Otherwise take the man in the field under the direction of a specialist and teach him how to recognize Blister Rust and let him see what it will do. This is to be done in various parts of the State. This may well take a week. He should then spend at least two weeks in a crew, as a crew man, linesman, foreman.

He should be given at least two weeks in scouting. Then place the man for at least a month with one of the best blister rust agents so that he may assist the agent in his educational work and in making of reports, even accompanying him in the agent's private interview work and finally assign him to a district. Just how long will be required for this training depends upon the man and other circumstances, but ordinarily the training of a new blister rust agent should extend over a period of six, to eight weeks. After the new agent is assigned to his district he should receive frequent visits from the State Leader until he is thoroughly acquainted with his work.

Plan of training

Our foremen are deserving of some special training and should be given the same. Ordinarily we pick our foremen from the crews, the members of which frequently have little knowledge about Blister Rust and put them into key positions. I know a state that has had foremen who had not the slightest idea of what eradicating of currant and gooseberry bushes was really all about. They did not know what Blister Rust is and other things too numerous to mention they did not know. I know that practically nothing has been done in a certain state to show the foremen and crew men that their work is not mere manual labor. They have been kept entirely ignorant of the service idea in ribes eradication. They are on the payrolls classed as laborers and they have been allowed to think they were nothing more. We want our foremen to feel that they are a part of a great organization and that they are doing their bit toward forest conservation. We want them to know all they are capable of learning about Blister Rust, its control, the Conservation Commission (or State Dept. of forestry) and its and their purposes and aims and the United States Dept. of Agriculture. When they leave our organization we want them to have a broader outlook and a keener appreciation of forestry and pest control. We need their moral support. Beginning

May 1st in New York there will be held a two weeks field training school for foremen. When the crews are organized we plan to have certain matters of educational value laid plainly before them.

Outline of organization for accomplishing objects.

I've been asked to give an outline of organization. This is done with the consciousness it has not been tried and if found feasible in New York - such might not be the case in other States.

Beginning with the State Leader, he should have sufficient capable office help to enable him to spend 5 days out of every week in the field. In states where there are a large number of crews the State leader should have an assistant in Ribes eradication, the business of this man to circulate among the crews and other field men and to keep close supervision of the work. During the summer season when there are fairs, picnics, exhibits to be arranged and much talking the Leader should have an educational assistant.

The blister rust agent should have an assistant in eradication. The duties of this man are to organize crews, check, keep account of acreage eradicated and to examine white pine woodlots preparatory to the interview of the blister rust agent with the owners. The business of the blister rust agent to be responsible for Ribes eradication in his district and to devote 85-90% of his time in private interview and other educational features of the work.

In the heaviest pine districts there should be additional blister rust agents temporarily employed during the summer for interview work.

Such a plan of work to be as follows: An agent to go into a community and figuratively camp there until every pine owner has been interviewed and if there are those who will not cooperate learn why they won't.

Local Leaders

We in New York are bound by a signed agreement to organize local project leaders in Blister Rust Control. Our efforts have met with a flat failure and we are to blame. Nevertheless I believe we should have them and regardless of any signed agreement we will make a strenuous effort to find the right sort of men for this work.

The control of White Pine Blister Rust is a very different sort of undertaking than any County Farm Bureau project. Unlike liming, spraying, better dairy herds, balanced rations for the herd, etc. the profits from the investment in protecting from White Pine Blister Rust result from a long time process and are not so easily and quickly visualized and realized as in Farm Bureau projects. We know that the majority of White pine owners today have little conception of the value of the White pine woodlot. It is therefore extremely difficult for them to understand why it is important to protect their pine from Blister Rust. They don't appreciate that the future generations must have timber.

Blister Rust is an extremely difficult disease to explain to the average land owner. How can we expect the local project leader to volunteer his time for Blister Rust interview work? For the ultimate success of our work we must win the moral support of the people in the communities where we work. The project leader can be a very vital factor in winning this moral support. There are many things he can do which will be of invaluable help in our work and with the crystalization of the sentiment favoring the control of Blister Rust and other forestry projects, the project leader will become all the more effective as a force in our work.

You will note that I have specified certain assistance for the State Leader. Judging from my experiences of the past twelve months I am convinced

that some of our State Leaders do not know as much about general field conditions as some of their agents. The fact that leaders do not get into the field more may be their own fault but I am inclined to believe more largely due to the lack of proper assistants.

I have suggested that the blister rust agent should have an assistant, the duties of this assistant - purely regulatory as outlined. The State Leader himself I believe, can better afford to be without the necessary assistant than can the blister rust agent.

The blister rust agent is the man who does the interview work - secures cooperation. So far as my own observations go, I do not believe it humanly possible for a blister rust agent to organize crews, find boarding places and to check his crews as they should be and conduct his educational work. Again, in some states there is a deplorable lack of careful and frequent checking. Careful checks should be made not more than two days apart on crews and the man who does this checking should be checked so that we can knowingly say to the cooperator " your pine are safe so far as Blister Rust is concerned" and also that we can say the same to the prospective owner so that he will believe us. All Ribes eradication done under State supervision we guarantee is done right. In discussing this very matter with one of our largest cooperators last fall, he said, when you install such a system of checking on your men and will guarantee that the eradication of the bushes will be thorough you will find that it will be very much easier to secure cooperation than in the past.

Suggested Educational Activities for Blister Rust Agents

By
L. E. Newman
State Leader, Blister Rust Control, New Hampshire.

Meetings

As I have been called upon at several other Blister Rust conferences for papers outlining educational work in Blister Rust control, it is quite obvious that most of you attending this conference are already more or less familiar with my ideas on the subject. Therefore, I will attempt to confine myself to emphasizing certain phases of the educational work which I believe the Blister Rust Agents do not push as much as is possible, and which, I think the State Leaders themselves often forget the importance of. We all appreciate the value that is derived from personal interviews, but it is quite obvious that our funds do not permit as much work along this line as is necessary. Therefore, the only other alternative lies in presenting our subject, namely the control of White Pine Blister Rust, before groups of people. To secure contacts through such a channel, every opportunity should be seized upon whereby talks can be given before all sorts of organizations. As the Blister Rust Agents are located for the most part with the local Farm Bureaus, it is quite natural that the greatest number of their talks should be given at local community meetings sponsored by the Farm Bureaus. During the course of the year the local Blister Rust Agent will find a great many opportunities to speak before Farm Bureau gatherings, if he keeps constantly in touch with the County Agricultural Agent. The Farm Bureau often holds county picnics, local community meetings, and once a year an annual meeting of the county organization. The fall or winter planning meetings, the time when the Farm Bureau projects for the ensuing year are discussed and adopted, present an excellent opportunity to secure Blister Rust control as one of the projects in the Farm Bureau program. It also offers an opportunity for the Blister Rust agents to have a local project leader appointed for this subject.

In some counties where the summer resort business engages the interest of the farmers more than agriculture, it has been found that Farm Bureau meetings of all kinds do not flourish to the extent that they do in other districts. In such communities the Blister Rust agent can not rely too much on agricultural meetings as a medium for presenting his subject, but he will have to go out and seek opportunities thru the medium of other organizations such as the Grange, Business Men's and Women's clubs, and similar organizations. He may, to good advantage, enlist the assistance of the office of the State Cooperator, generally the Forestry Department, and hold meetings of his own under the direct auspices of that particular state department.

Exhibits.

Another phase of this work that all of us are too apt to lose sight of and from which great benefit can be secured, are Blister Rust exhibits at fairs, store windows and various sorts of meetings. Here again is an opportunity for bringing Blister Rust before a large number of people at a relatively small expense. I can think of no better case which so forcibly illustrates this point than by mentioning the outcome of an exhibit staged at one of the town fairs in New Hampshire in the late season of 1922. The Agent in charge of the work in that county utilized the services of one of his best foremen, who had just completed work in eradication, and placed him in charge of the Blister Rust control exhibit at this fair. The duty of this attendant was to explain Blister Rust to all who applied for knowledge on the subject; to record the names of such persons as desired an inspection of their woodlots, and to impart any other information relating to the work upon which people desired enlightment. As a result, a list of 300 names was secured from persons residing in 40 different towns. The entire cost of this exhibit, exclusive of the time spent by the agent in setting it up, amounted to a trifle over $12.00. It is quite obvious that these 300

people could not have been interviewed in their home towns for such an insignificant amount.

Posters

As I have expressed myself quite forcibly in times past on the subject of posters, it hardly seems necessary to re-state my views on the matter. However, inasmuch as we have worked up during the past season what might be termed a new class of Blister Rust posters, a word or two of explanation in regard to their line-up may be in order. The posters on display at this meeting were designed for the purpose of presenting to people in different sections of the state, actual conditions as they were disclosed thru field investigations. This method of imparting damage data has never been before attempted in New Hampshire. I am firmly convinced that by the use of a graphic illustration, the seriousness of an infection can be better portrayed to the average pine owner than if the same data was presented by a set of figures.

We have also tried to depart from the past practice of giving too much prominence to the words "Blister Rust", as we have felt that now as the subject is more or less generally known, the object of the poster should not be too apparent at the first glance, otherwise the person seeing it is likely to turn away with the remark "Oh, that is some more propaganda regarding Blister Rust". It is for this reason that in the last two posters that have been gotten out, we adopted a scheme, known among advertising circles as the "teaser type" of wording. In such posters all of the sentences or words appearing in large heavy-faced type are so constructed as to give no clue as to the subject which we desire to present to the public. We attempt to make prominent certain words and phrases which are calculated to arouse the curiosity of the public. The whole idea of the scheme is perhaps best conveyed by copies of two of these posters, which have been attached to this paper.

I believe that in any well planned educational campaign, some thought is given to the matter of determining how effective the material used proves to be. There are many ways of doing this and most of the common means are too well known to necessitate their mention. We have felt in New Hampshire that inasmuch as blue print posters were to a large extent a new type of education that it would be well worth while to discover how effective they were. Consequently a small envelope or pocket was prepared and franked postcards placed therein. The pocket with it's enclosures was attached to the bottom of the poster and on the outside of the pocket appeared instructions as to the use of the card. The card itself is addressed to the local Blister Rust Agent and all that the owner has to do is to indicate the kind of service he desires, sign his name, give his post office address and drop the card in the mail. By this means we hope to secure some conception of the impression that these posters make upon the general public.

I believe that one of the great advantages attached to the blue print poster lies in the fact that often a small edition is desired for a specific purpose, and to have a few posters made by the printer often necessitates too large an outlay of funds. Furthermore, posters are often needed in a hurry and can not be produced by the average printer within a certain specified time limit.

The Written Word.

Next to meetings, exhibits, and posters I believe that a great deal of helpful education can be obtained thru a definite follow-up program of news items. Space, no doubt, can be secured each month in the Farm Bureau bulletin. If possible, it might be well to have some definite page assigned to the Blister Rust agent and such a page might have a permanent heading such as the "Forestry Department" or "Blister Rust News", or some such similar title. This would give a definite position in the Farm Bureau bulletin for all blister rust news

and after a time people would know exactly where to turn each month if they were interested in following up this activity. The use of county and local newspapers should not be ignored, for they form a considerable proportion of the reading material in the rural sections. One of the blister rust agents in New Hampshire has adopted a scheme of inserting articles in both the Farm Bureau bulletin and local newspaper which have to do with actual field trips made by people around his county. These items are composed for the most part of remarks covering the observations and impressions of those attending these meetings. In this way he finds new phases and ideas for emphasizing the seriousness of Blister Rust and the effectiveness of control measures. This same agent often requests permission from those attending the meeting to publish their statements and views on Blister Rust. Whenever such permission is secured, the names of the individuals are given in his news article and as they are often persons of influence, it is quite apparent that added prestige is thus given the work.

In conclusion I wish to emphasize my belief that it is very important that all educational work about a State be directed by the State Leader. It so happens in Blister Rust control that all of the State Leaders have had a greater all-around training in Blister Rust work than any of the local blister rust agents. Consequently, they are better fitted by this experience to determine what is the best type to use and their censorship of all material worked up by the local agents prevents any poorly prepared material from being distributed around a county. I, furthermore, believe that during the winter months the State Leader should devote a considerable proportion of his time in assisting the agents in working up educational material, not only for use during the winter campaign, but also to be employed during the Ribes eradication season. Everyone from the State Leader down is likely to be working under full pressure during the Ribes eradication season and, therefore, is unable to put in as much time or concentrated effort as is essential if good, live material is to be turned out.

B A C K I N 1 9 1 6

Skeptics Shrugged Their Shoulders and Said

"Blister Rust Is Nothing But a Fake

It Will Not Harm The Pines"

TIME PROVED THEM WRONG

for

N O W I N 1 9 2 3

DEAD AND DYING PINES

a r e f o u n d

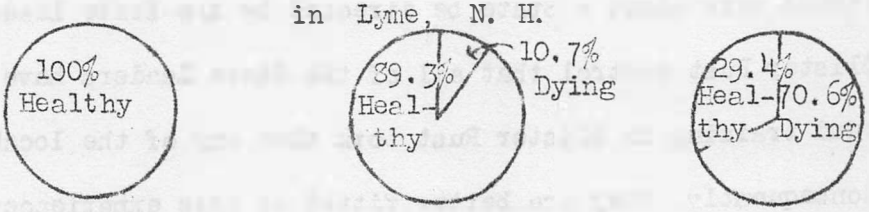
IN 204 TOWNS IN NEW HAMPSHIRE.

* * * * *

T H E W H O L E S T O R Y

of one pine lot

in Lyme, N. H.



From 1911 to 1917 to 1923

THIS LOSS COULD HAVE BEEN PREVENTED

By Destroying Currant and Gooseberry Bushes in 1911

* * * *

PINE OWNERS OF GRAFTON COUNTY!

Why Allow Blister Rust to Kill Your Pines?

* * * *

FOR FREE INSPECTION OF YOUR PINES, - WRITE

THE NEW HAMPSHIRE FORESTRY DEPARTMENT

Concord, N. H.

I N 10 M I N U T E S T I M E

A VALUABLE FOREST CROP MAY BECOME

F A T A L L Y I N F E C T E D

by a deadly bark disease - The Blister Rust

which spreads only from

currant and gooseberry bushes

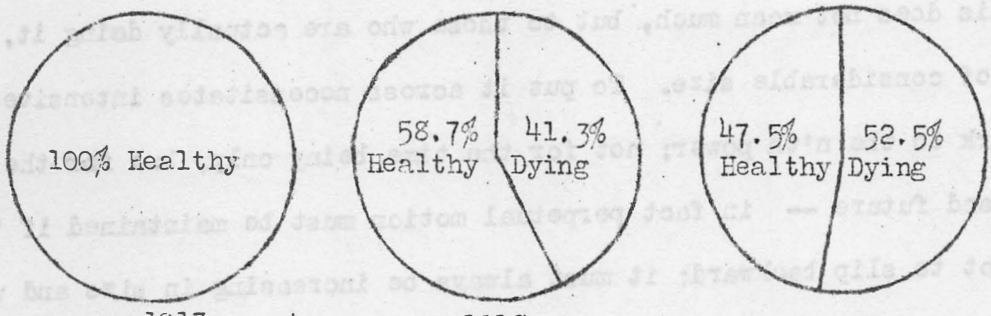
growing among or near the pines

R E A D

THE WHOLE STORY

Of What Happened To One Pine Lot

In Sunapee, N. H.



FROM 1917 to 1918 to 1923

PINE OWNERS OF SULLIVAN COUNTY

DO YOU KNOW

1. Whether Blister Rust Is In Your Pines?
2. That The Rust Can Be Controlled?
3. That The Cost Is Low?
4. That A Free Examination Of Your Pines Will Be Given Upon Request?

The Intensive Educational Features of a Blister Rust Control Agent's Work.

by
W. C. Frost
State Leader, Blister Rust Control, Maine.

In order to treat this subject, it is deemed advisable, first of all, to say a word regarding Maine's Blister Rust Policy.

The gist of this policy, which has been in operation but two seasons, is "that the State, with such Federal and town aid as may be available, will handle the necessary educational, scouting, and supervisory work; but that the actual eradication of Ribes must be done by the pine owner at his own expense."

To one not familiar with the actual operation of this policy, and to be familiar with it, one must actually have been compelled to do it and earn his salt.

This does not mean much, but to those who are actually doing it, it is an order of considerable size. To put it across necessitates intensive educational work to the n'th power; not for the time being only, but for the past, present, and future -- in fact perpetual motion must be maintained if the work is not to slip backward; it must always be increasing in size and weight, otherwise it will rapidly go stale and lose out. To keep up in the race against the disease a blister rust control agent must have the patience of Job, the strength of Gibraltar, and the sticktoitiveness of a porous plaster; otherwise he will fail to accomplish our objective -- the protection of thousands of acres of young white pine by pine owners within the period of the cooperative eight year control program.

Intensive educational work may be divided into two component parts

(A) Interviews and follow-up calls, which are developed in the following way:

I - By selection and schedule for working of areas.

II - By selection of materials to be used.

III - Working out of method of procedure.

IV - The quantity, time, and present status in relation to goal.

V - The measure of results.

(B) Demonstrations - which are developed by following the same procedure as outlined for (A).

The medium through which the educational work is done is divided into three parts:

I - The individual.

II - Group.

III - Local Leader.

How this works out in Maine, we will now try to show by describing the blister rust agent's work for a year.

The success of our work hinges entirely upon educating the public concerning blister rust and its control. Without it, where would we be? Nowhere. With it conducted at the proper time, the proper place, and in the proper manner, we have succeeded to such an extent that there are very few pine owners in the State who have not heard of blister rust. Whether or not they believe in it is another matter, - they will be shown and converted in due season which time usually comes within one or two years after their towns make a blister rust control appropriation.

The selection of towns to be worked in a county is largely determined by the blister rust agent. He must get started somewhere, and it is but natural that he start the ball rolling by selecting the most likely prospects first, believing that the "hard ones" will fall in line later. Once he makes his selection he concentrates on those towns and conducts his educational work with a view to encouraging town appropriations.

Throughout the year, but to a greater extent during the off season, that is during the fall and winter months, particular stress is placed upon giving talks on blister rust at various public gatherings, such as granges, clubs, farm bureau meetings, etc., interviewing pine owners, large and small, town officials and leading citizens in the community. If the town appropriates funds for cooperative control work, the money is used to hire trained foremen to supervise the local Ribes eradication work on pine areas within the town. It is this "getting something for nothing" that causes nine out of ten pine owners to agree to eradicate Ribes. By supporting the blister rust article in the town warrant, they will receive their share of the work of a trained foreman. It is very rarely that a town needs to appropriate for more than three years running.

In each town it is necessary to locate several prominent citizens who must be convinced that blister rust is a menace. Circular letters are sent to several hundred pine owners outlining the nature of the work, the objective, the need of their town's help, how the cooperative funds are spent, and urging their careful consideration of the blister rust article in the town warrant.

Naturally these people "want to be shown", and it is therefore up to the blister rust agent to show them usually by field demonstrations in groups or individually. Usually the agent has previously located badly infected areas of pine so that it is an easy matter to prove his statements concerning disease and damage. As a further argument, the agent posts infected areas near roadsides with red and white posters, thereby informing the owner and general public that the lots have blister rust. Other posters are placed on the diseased trees, thereby attracting closer observation from the passing owner and the general public.

Town meeting day has arrived, the blister rust agent has planned to attend as many of these as is possible, but is lucky if he succeeds in attending two, while one is usually the limit. As soon as a town appropriates, definite control areas, chosen by the selectmen and blister rust agent, are set off on a town map, and all educational and Ribes eradication efforts are centered on cleaning up this area during the coming season.

The next step is for the blister rust agent to locate two or three men who are to work temporarily as assistant agents among the pine owners. What these men do either makes or breaks the blister rust agent. He knows it, and knows it is up to him to get value received from them. He must teach them, supervise them, check them, correct them, praise them, - and "fire" them if found wanting.

Now that the blister rust agent has his temporary agents in the field he must locate several town foremen, as he usually works three or four towns at one time. Finding men suited for this job is a difficult task, due to the low wages the town officials want to pay, the brief length of service, the character of the work, and above all else, the time of year. The Ribes eradication season comes when labor commands good prices, in fact the wages paid for nearly all classes of labor are higher than that paid for, "Ribes pullers". Is it any wonder that the blister rust agents are continually in "hot water"? Having enough men this week, half enough next week, etc. is but one of the many joys of an agent's life. This is apt to occur the first season in new towns, but is not so difficult the next year.

Previous to placing the foremen on the job, the temporary agents have examined the pine lands, located the Ribes, interviewed the owners, and made arrangements with the owners regarding the date they will be ready for the foremen to assist them in eradicating the Ribes. We now have the town, the

owner, and the State and Government cooperating, all under the blister rust agent's supervision, which includes the hiring and training of scouts and foremen, educational work, the keeping of records, supervising and checking work done, publishing press articles, convincing non-resident owners of the necessity for Ribes eradication, and above all else, keeping up the morale of his field force. There are bound to be men who are weak on certain points, such as record keeping, and over-sensitiveness when unbelievers ridicule their work; which "takes the heart out of them". The blister rust agent must be the cure-all for all trials and tribulations!

At the end of the season, after the annual report is out of the way, which should be by December 15, but is more likely to be nearer January first, the agent begins to think of next year. For each town where work was done he prepares a report for the town officials and town records, giving acreage eradicated, number of Ribes pulled, number of owners cooperating, and a map showing progress of the season's work.

Letters are sent to each of the hundreds of pine owner cooperators summarizing the year's work, and, if the town was not completed, and another town appropriation is necessary, the owner is requested to support the blister rust article in the town warrant, thereby giving him the opportunity to help the other fellow in the unworked part of the town. Similar letters are sent to hundreds of pine owners in new towns and parts of towns where work has not been done, the object being to arouse interest in blister rust control. It is the agent's only way to "get set" for the coming season. Year after year the same work must be done - there is no letup.

A job of this kind requires constant attention by the agent, both in the field and in the office, he cannot neglect the one for the other. The bulk of his time during the Ribes eradication season must necessarily be devoted to

field work, supervisory and educational, but he cannot afford to neglect his office work, the duties of which are many. Records of his own work, that of his temporary agents, his foremen, the town expenditures, and of the hundreds of cooperators, etc., etc., must be kept up to date. It is next to impossible for him to have regular office hours. He must take advantage of his time whenever opportunity presents itself. Although rainy weather stops all Ribes eradication work, and costs continue to pile up, he welcomes them, for then only does he get a breathing spell and can attend to his office work.

During the past Ribes eradication season averages show that each blister rust agent handled the educational and eradication work in ten (10) towns, which necessitated keeping the records and supervising the work of two hundred and eighty-seven (287) pine owners, and the work of four hundred and fifty eight (458) crew members.

All of Maine's blister rust agents, there are but four of them, fully appreciate the task before them, - that of completing our job by 1930, and intend to be pretty close to the goal by that date providing they continue at the present pace, - that is, cleaning up three hundred thousand acres each year, but it can be accomplished only by intensive educational work.

PLAN OF WORK FOR THE STATE CHECKER AND CREW FOREMAN.

by
A. F. Amadon
State Leader, Blister Rust Control, New York.

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State Checker

It is nearly as essential to have a checker or system of checkers as it is to eradicate Ribes. We all know from experience that some of the areas worked in 1917 and 1918 should now be reworked. The organization then was not far enough advanced to include a plan of checking. The one idea was to develop effective methods to "pull brush", which was the main duty of the eradication crews. In those days the standard crew had not become the established method of procedure. There are, however, many areas eradicated in 1918 where efficient work was done. This was due to a superior type of foreman who happened to be on the work. He worked with an idea of thoroughness in any task he undertook. That type of foreman is in the minority today. The last two seasons the acreage covered has increased so rapidly that we are obliged to develop foremen. In New York State a school for foremen is to be held this spring where they will be trained to do their work efficiently. When an organization develops rapidly care must be taken that waste or lost motion does not develop and we must see to it that quantity is not put on a higher plane than quality. In New York State we are planning to give an owner whose land we work a guarantee that he will be assured of a merchantable stand of pine so far as blister rust is concerned if Ribes are eradicated under our supervision. In other words we will be responsible for the work done on his land. In order to do this a checking system is to be installed in New York State whereby the work of a crew will be checked every few days. The elaboration of this plan depends upon the appropriations available. If appropriations are small the checking will have to be done

by a field assistant to the blister rust agent who will also scout land prior to interview work and attend to the cooperative eradication of Ribes in an agent's district. If appropriations are available this person will do nothing but check the efficiency of the crews in a given district.

The checker should do nothing but check. I am dealing with the subject under ideal conditions; namely, upon the blister rust forces receiving ample appropriations. The checker is not responsible for good eradication in the particular district he works in. The several foremen are the men responsible for that. However, it is his duty to inform the foremen of the degree of efficiency of the work done by his men.

The blister rust agent in that district should receive this information together with the state leader or his assistant. If there is a man solely in charge of eradication in a particular district he should be delegated authority to give the necessary instructions to the foreman. The checker should not do this. If there is no one in a particular district in charge of eradication, the state leader should give these instructions to the foreman. However, the checker should work in cooperation with the foreman and crew if it is possible to do so. The checkers field notes should be computed the same day as taken in the field and the season's work compiled by districts. The checker is a temporary field assistant and for this reason alone should have his district and seasons records complete for the state leader by the end of the eradication season.

His job should be one of service to the land owner as well as that of the blister rust agent. If the question were asked me what particular thing should be done in New York State this year to further the blister rust work in a district I would answer - "Look to the improvement of the foreman with respect to obtaining the confidence of the people in his district". Progress in the present control program can advance only in proportion to the favorable reception by the

land owner of the sincerity of all the men engaged in the work and confidence which is a natural result of sincerity.

The foreman is usually the one who comes in greater contact with the land owners in a town than any one man in the blister rust organization. Local men of good repute in their district should be chosen if possible as crew foremen in that district. We must be careful to see that our foremen are trained to meet the land owners and intelligently discuss their particular job, the disease itself and blister rust work in general and so train him that poor work will not be possible. The foremen are a big force in the organization in their districts and must be trained to intelligently meet the demands made on them by the land owners.

For this reason in New York State early this spring we are going to conduct a school for foremen that is to last a week or ten days. Here prospective and present foremen will be given intensive thorough schooling on the disease itself, forest types, methods and other details of eradication work, and they will be particularly instructed in the workings of our cooperative control program and what his place is in it. I think that it is one of the best things that we can do and the results will be forthcoming this very season.

The object of a state checker is to insure efficient work to the land owner and other cooperating parties. The office of Blister Rust Control has willingly left the work of checking to the states themselves and I think that is the agency by which the work should be done.

The business of the position is to examine eradicated areas; to determine efficiency of Ribes eradication; to report conditions; and to designate location of poor work. Last season New York State spent a considerable amount of money trying to get information as to how checking should be done; what methods were the best, etc.

There are two workable methods of checking; first, the strip system, second - the plot system. Each one has its weakness and I do not think either one is sufficient in itself. The strip system is weak in that the percent of efficiency cannot be accurately arrived at. In the strip system this is aimed at by a comparison of bushes originally on the plot with what was left after eradication. In computing percent of efficiency the number of bushes originally pulled is not known, only a guess is made. That fact in itself somewhat discredits the strip line method over a large area. Ribes conditions differ in different parts of the area. Consequently the number of Ribes to the acre varies. The number of Ribes per acre is a figure not arrived at accurately until the season's work is done. It is the exception when two men can come within 25 Ribes to the acre on a guess as to the number of Ribes to the acre under conditions where the Ribes run 100 or more to the acre. The other information obtained by this method is the number of bushes and leaf bearing stem left to the acre. This is not in the form where it will be of much value to us because we have no measure or standard by which we can compare it. What number of Ribes to the acre can be safely left without commercial damage to the stand of young pine? There has been no information available on this subject but studies have been projected along these lines. There is need for such data now in connection with our checking. There is a doubt whether one man can check efficiently using this method. In the strip method the checker runs a compass which necessitates his eyes being off the ground too much. Last season I tried using the eradication strip lines in place of compass lines and found that our poorest work was done by the linesman. The work toward the middle of the strip was the best. So a line was run between the strip lines and parallel to them for quite a distance and then back to the start of the strip line over the crew's eradication line and this gave me what I thought workable average conditions. As a result

of observations along the crew's eradication lines we are going to adopt the paper trail in place of the spotted line in New York State.

However, I do not believe that we should discard the strip line system. It has an important bearing on the Ribes eradication work, a psychological one, namely, the crew knows they are being checked and will be on their toes and this is so whether we use the strip line or plot system.

The plot system in my estimation is the best method. The method of procedure is as follows: The checker goes ahead of the crew on the line outside of the strip just completed and lays out one 1/2 acre plot on uneradicated land and another 1/2 acre plot adjoining it on land just eradicated. These plots lie adjacent, of the same shape and have one common side. When the crew comes back on their line they are stopped and directed to pull the Ribes in the uneradicated plot and then go on. The checker counts the bushes pulled and then goes over this plot again noting Ribes left. That gives him the total Ribes per acre and the number of Ribes that were missed, data sufficient to arrive at an accurate percentage of efficiency on that plot. Then the checker goes onto the other 1/2 acre plot where the crew pulled Ribes not knowing they were to be checked and the missed bushes counted. The number of Ribes to the acre is nearly alike on both plots (they were purposely chosen with that idea in mind), so we can now apply percent of efficiency here and feel that the figures are nearly accurate. The one thing to be careful of here is that these plots be taken where the Ribes per acre runs nearly the same on both plots. This method takes considerable time because the plots should be laid out where the ground conditions are nearly alike. Of course the plot the crew pulled Ribes from under observation will show better work than the other plot because human nature enters into it and you cannot prevent this. But the plot worked where the crew was not under observation will give a fairly accurate percent of efficiency. This plot

system can only be used where there are a great many bushes to the acre.

The ideal method of checking would be to lay out plots much advanced in point of time to the eradication; mark its boundaries and count the bushes. Then after eradication the plot is worked over and the missed bushes noted. The crew are quick to notice any disturbance of brush etc. in their work and become very suspicious if the ground cover does not look just natural to them. This factor prevents the laying out of these plots just prior to eradication as the brush has to be kicked up, broken etc. in going about to obtain count of the Ribes bushes.

My observation for the past three years has been that as a general rule in the eradication work the efficiency has been up to standard. Plots at Chestertown on land eradicated in 1918 and 1919 are cases where efficient work was done. The crews that usually do poor work will do good work if they are checked and the crews that usually do good work will do excellent work under the same conditions. The psychological effect on the men is the important phase of checking work. The cost of eradication is determined in part by the speed of the men in moving over the ground. Some say speed up the men. If that is done bushes will be missed. How many can be missed with safety? Just how much one can speed a crew with the resulting missed bushes all depends on how many bushes or how much leaf bearing stem can be left with but small commercial damage to the pine. This has not been worked out and until it is we must continue using our standard of 95% of the bushes pulled as being good work. If a larger percentage of Ribes left will commercially protect white pine stands we should know it in order to take advantage of that fact to speed up the men with the resulting lowering of costs of eradication work.

Crew Foreman

In dealing with the subject "Plan of work for crew foreman" I do not

feel that I can add much to what the state leaders already know of that particular phase of the blister rust organization. A foreman's position is already well defined and I doubt if there is or will be need for any material change in the plan of work of this position. His duties are limited to certain definite details. Therefore new activities cannot be added since they would interfere with his primary duty.

The business of his particular position is to efficiently supervise the work of an eradication crew and to attend to keeping a daily record of the work performed on B.R. 1's, attending to payrolls etc. I am obliged to deal with the work of a crew foreman as I know him in New York State, simply as a foreman in charge of a crew on strip work and not as a scout, as we have not yet had much area to be eradicated that could be done by the scout method.

The foreman is the back bone of the crew and upon him primarily rests the efficiency of the whole crew. He must check each man's work, seeing to it that the roots and small seedlings are pulled as well as the large bushes. If at all possible work should be found for him in the off season in order to have him available each eradication season. He should receive a much larger wage than the man in the crew as his type is rare. Foremen are to a large extent born foremen, not usually made foremen.

The foreman is alone responsible for the conduct of the men in his crew and its eradication work. He is a field man primarily and for this reason should be one whose life has been spent in part in the woods. He should have had experience as a crew member and must be able to take charge of a crew, in other words must have enough stability and strength of personality to be a crew leader, enforce discipline and keep the men on their toes while at work. He should be able to quickly size up the shape and area to be protected; determine the width of the protective strip; judge how fast the crew should work (depend-

ing on the character of the undergrowth and the number of Ribes to the acre); determine the length and width of strips. - In short he should be able to plan the work for the crew and see that it is properly done.

There is one other thing a crew foreman should be able to do and that is something he does not or cannot do at present in New York State. This may be true in other states. In fact it is our chief concern in regard to the foremen this coming season who will be in charge of work on private land, namely, that he shall be able to intelligently discuss the cooperative blister rust work in his district; the life history of the disease in simple terms; identify the disease on Ribes and pines and answer questions concerning the blister rust work in the State as a whole and in his district in particular. A foreman can greatly help to put the confidence of the people in the work on a higher plane than it has been up to date in his particular locality.

PLAN OF WORK FOR ADVANCED SCOUT

By
H. W. Hicock
State Leader, Blister Rust Control, Connecticut.

I feel somewhat hesitant about writing on this subject because the advance scout as such as not been used in Connecticut and my experience is consequently limited. However, I will do the best I can and my remarks may serve as a basis for discussion if nothing more.

Responsibilities, Requirements and Authority

I believe that the advanced scout should be primarily responsible for two things.

1. The specific location of areas to be eradicated by a crew and
2. The checking over of these same areas after the crew has finished.

To these might be added the removal of small patches of Ribes where he can do this more efficiently than a crew.

The advance scout should be the man in charge of Ribes eradication or second in command in case the eradication boss cannot do the scouting himself. He should be a man who can read maps and can do reasonably good sketching and in addition knows Ribes and their habits.

The authority vested in him will depend entirely on his personality. A man may have all the attributes of a good scout and still be the wrong kind of man to supervise a foreman and in this case he should report his findings to the Ribes eradication boss and let the latter direct the foremen.

I think it especially desirable that a scout check the areas which he lays out for he is really the best one to judge whether these areas have been properly covered or not. I also think that scouting should be done just before the crews go in andnot several weeks or more in advance. Moreover, the scout should accompany the foreman to get him started right and show him definitely the bounds of the piece to be eradicated.

Object

The object of advance scouting is to get a preliminary report on a specific area preferably bounded by roads or natural boundaries showing:

1. Those areas where crew work is necessary.
2. Areas which can be worked by one or two men - roadsides, stonewalls, etc.
3. Those areas which, on account of lack of Ribes, distance from pine, or other reasons may be eliminated.

The results of such a report are necessarily the elimination of much costly crew work and therefore a gain in efficiency.

Business of Position

The method of procedure must vary with the scout and with the territory to be covered. An experienced man can take many short cuts and get the same results as one less experienced. In general I think that a scout should cruise his territory systematically at intervals frequent enough to give him a good idea of the entire tract. An interval of 1/8 - 1/4 mile is probably great enough. This method enables a man to keep himself located. He can therefore sketch in all data needed. Whatever the method used, the work should be systematic.

In some sections it may be possible from experience to eliminate certain kinds of terrain, but I feel that such a process should be used very cautiously. I also wish to point out that in covering a given territory a good man can obtain data on several subjects almost as cheaply as he can obtain it for any one of them. There is a limit of course to what he can get without slowing him down too much. In addition to getting the necessary data on areas for eradication and elimination should also sketch in all areas

on which pine forms 25 per cent or more of the stand. This would make an excellent start on a pine survey if one has not already been made or serve to check up any existing surveys.

Goal

The goal, as I see it, is the elimination of as much territory as possible from crew work. The results of the work will be measured by an increase in the amount of land covered with a consequent lowering of the per acre cost.

Schedule

In order to formulate a working plan a scout should go over a town or other unit very rapidly to find out what blocks are most in need of working and make himself a schedule accordingly. The crews should ordinarily follow this schedule.

I do not believe that a scout should have many blocks worked ahead of the crews. If he can scout and check for more than one crew he should have more crews and if it is impracticable to give him more crews he should be assigned other work to fill in his time.

SUGGESTIONS CONCERNING A PLAN FOR MAKING PUBLIC BLISTER RUST INFORMATION

by
J. E. Riley
State Leader, Blister Rust Control, Vermont.

There is no need of arguing the advisability of putting blister rust control information before the public. We recognize that there is no more effective means of arousing public interest either in materials or ideas, than through the medium of information properly handled. At the same time we appreciate that there are good and poor methods of presentation and that the latter are expensive, ineffectual and sometimes harmful.

Are we, in our efforts to secure pine protection, employing the most effective educational methods or are we, in our ignorance of the technique of such work, wasting a large part of our efforts? I, for one, am not satisfied with results obtained from the general educational phases of our work in Vermont. We are not equipped either by training or experience to fully utilize the most effective methods of education, nor do our agents and state leaders have the time to master the technique even though they acquire the principles. I am not admitting that our efforts in this direction have been wasted, but I know that we have not made the most of our opportunities. I cannot help but feel that somewhat similar conditions prevail in the other states due to similar causes. If this is true, isn't there then need of some one in each state who can devote his whole time to such work, someone with training and experience and a natural inclination for educational work? Such a man should speed up our progress materially by taking over part of the blister rust educational work for which the agents are least fitted, thereby allowing them more time for personal interviews, demonstrations and supervision of the Ribes eradication work in their district.

Any of us can pick up a book and read that successful presentation of information to the public must:

Attract favorable attention
Develop interest
Create confidence
Convince
Induce to action

but after we have learned this or some other formula, must we not have the technique to secure these results and will not the acquisition of such technique take more time than most of us can devote to the job? It stands to reason that a man with no responsibilities except for general educational work will have the time to study local conditions, acquire a knowledge of the problems confronting the people of whatever districts he is working and consequently devise and carry out a campaign of education in blister rust control carefully planned for local conditions, with a definite objective and possessing a continuity that our previous efforts have lacked. At least the efforts of such a specialist, although untrained to start with, should be a distinct improvement on our present efforts.

Let us take for granted, for the sake of discussion, that an assistant to the State Leader is appointed for this work. What should we require in such a man; what are his responsibilities, and what authority should he be given?

The ideal man would be one who has had considerable training and a successful experience in educational fields, but such a man would come high and our financial condition will probably prohibit a large expenditure in this direction. Since such a man is probably out of the question should we not choose one with a fair education who has shown that he possesses good judgment and an ability for such work, and who can acquire the principles and develop his technique on the job?

He should be made responsible to the state leader for developing and carrying out the general educational features of the state blister rust control

program, paving the way for the intensive educational work of the district agents. He should work in cooperation with the district agents, planning his campaign so as to best promote their programs and facilitate their methods. He should rank in the state with the blister rust agents, being neither subordinate to or in authority over them. It should be understood that he handles one phase of education while the agents retain full responsibility for results obtained in their districts, but taking advantage of and being guided by the state's general educational program. The work of these men should supplement each other, the object of both being to promote the best interest of the service and to accomplish the control program within the allotted time.

Since we are supposing for the sake of discussion that an assistant is to be appointed, let me provide further grounds for discussion by suggesting the duties of such a position and some of the various means by which general education can be promoted.

First of all he should organize and coordinate all general blister rust educational work in the state. This includes meetings, exhibits, publications distributed, items published and posters placed.

Second, he should cooperate with the blister rust agents so as to relieve them of as much of this work as possible.

Third, he should study blister rust control problems to originate, develop and supply to others, or himself apply, ideas, materials and plans for each district adapting them to local conditions.

Fourth, he should act as a clearing house for general facts and methods.

Fifth, he should make, maintain and utilize contacts with all available forces such as farm bureaus, granges, societies of various kinds, and newspapers and other publications.

Sixth, he should keep adequate records and submit suitable reports to this work.

For each of these activities he must establish its purpose, the method of procedure, the goal and means of measuring results obtained.

Having argued the need of an educational assistant to the state leader, outlined the work he should undertake and the methods by which he should approach them, I am going to make some suggestions for developing this work, - not because I am sure that there are no better methods or because I have put great thought on the subject - but simply to establish a starting point for discussion whereby a more effective educational campaign may develop. If I do not succeed in providing anything more than that I do not know what I am talking about, by this very fact I will have at least demonstrated the need of an assistant for such work.

The purpose of our general educational work should be to attract attention and, by constant repetition, to impress on the public mind the need of pine protection. Moreover it should establish in the mind of the public the status of our blister rust agents and prepare the way for their more intensive efforts that are designed to bring matters to a focus and induce immediate action. The purpose for which we organize and coordinate is to more quickly and effectively accomplish this work. We might proceed to develop it as follows:

First, survey the field to ascertain conditions.

Second, prepare a plan for each district utilizing such agencies at our disposal, to such a degree and in such sequence, as to best fit in with conditions and bring results.

Third, determine how much time we have in which to accomplish our objects, taking into consideration what has been done to date, and arrange our program accordingly.

Fourth, devise a method for measuring results obtained.

The educational assistant should cooperate with blister rust agents so as to relieve them of as much general educational work as possible. He could arrange, plan details and supply material for meetings, exhibits and news items, besides devising, placing and replacing posters, and establishing roadside demonstrations. Results will be measured by the number of people reached and the amount of private cooperation secured.

The purpose of a study of our blister rust control problems is to analyze the various factors that go to make up these problems, and to devise the most effective methods for overcoming them. An educational assistant should analyze past efforts and their results, discover the causes of their failure or success and build up his methods from this knowledge. His analysis of a situation might include a study of the economic conditions of the locality, the every-day problems of the people, especially those pertaining to the pine woodlot and its relation to the farm finances. He should observe the reaction to various methods of presenting information, know their prejudices, their interests, learn who are influential and to what source they look for guidance. When he has made his analysis he has a solid foundation upon which to build his plan of work.

Also he should act as a clearing house for general blister rust educational facts and methods and should be the source to which a blister rust agent or state leader can turn for advice or consultation on such matters. When he has analysed the blister rust educational problems of a community or of the state he should record them so as to make them available at any time.

An educational assistant as well as the blister rust agents should make contacts with the farm bureaus, granges, various societies and, of course, should utilize such contacts to further his work. He could take over at least part of the meetings, motion picture shows, lectures and assist in field demonstrations besides supplying news articles for the papers. In summer much of his

time should be devoted to meetings and demonstrations with the agents and to working up field data for educational purposes. In winter he should study conditions, tabulate and analyze his data, supply news to the papers, originate and place posters besides planning with the state leader and blister rust agents his program of work for the following summer.

You will note that I have suggested simply the machinery and tools with which an assistant might work. I have purposely avoided technique since that is the job of the specialist.

PLAN OF WORK FOR A BLISTER RUST SPECIALIST

By

W. J. Endersbee

Office of Blister Rust Control, U. S. Department of Agriculture.

I. Need of Specialist

The need for a specialist in a limited district, comprising two or three states, rests primarily in the fact that the state leaders are functioning in two capacities, namely as administrators and as specialists. The executive position, which the leader fills, demands too much of his time to permit him to give the necessary time and thought to the specialist work. It is therefore essential that a special blister rust worker be assigned to a small group of states for the sole purpose of assisting the leaders in the technical part of the program. He would also function as a mobile force in studying, developing and suggesting the application of ideas and methods for improving the work.

II. Object

To study and stimulate the cooperative control work in all parts of his district by finding its weaker phases and devising means whereby the State Leader may correct and improve the work by making proper adjustments to the end that the cooperative control program will go forward according to schedule.

III. Responsibilities and Authority

In general the specialist is responsible for pulling up the weak points in a state's cooperative control program, especially the educational features, to the highest possible level of efficiency and to accelerate the control program as much as possible. He is administratively responsible to the Bureau of Plant Industry, but is expected to work in harmony with the working plans of the State Leaders in his district. The specialist has no authority over State Leaders or blister rust agents.

IV. Business of Position

Some of the specific things which the specialists can do are enumerated as follows:

A. To make and maintain contacts

(a) Method of procedure

Contacts will be made with all parties taking part in the control program. This is essential in order to coordinate the efforts of all and bring about a complete understanding between them. The specialist will apportion his time so that a definite number of contacts will be made with State Cooperators, Extension Leaders, Agricultural Agents, State Foresters, Forestry Extension Specialists, Forest Service, Forest Schools, Forestry Societies and Associations, State Leaders, and Blister Rust Agents. Often times two or more contacts can be combined into one visit as for example the contact can be made with agricultural agents during a visit to the blister rust agent.

(b) Goal

The goal to be reached by contacts is to bring about a better appreciation of the work and increase coordination and cooperation between these interested parties.

A calendar of work for the year has been prepared showing the number of contacts and the time they are to be made. A copy will be given each State Leader in his district.

(c) Measure of results.

The results of the contacts will be measured by:

1. The amount of cooperation between these agencies.
2. The degree to which plans are carried out in directing and coordinating the work.
3. The increased amount of cooperation secured by the blister rust agents.

Part of these results will be shown by the record and report system now in use and a part by a special card system used by the specialist.

B. To assist the State Leader in developing a plan of work for the state and each district.

(a) Method of procedure.

The specialist will cooperate with the state leader and may assist him to formulate a plan of work for the state. They in turn will cooperate with each agent in developing a plan of work for his district. Every state needs a well defined working plan covering every phase of its control program. When the plans are drawn up for the state and its district, the specialist will assist the leader and agents to put them into operation.

(b) Goal.

The goal to be reached is an active working plan to guide and coordinate the activities of each working unit. Such a plan should be prepared to go into operation by April 1, 1924. At the present time there is no state with a complete working plan.

(c) Measure of results.

The result will be measured at the end of the year by:

1. The number of states and districts which have definite plans in operation.
2. The increased amount of work done under the plans.
3. The greater smoothness and ease of accomplishment.

C. To assist leaders and agents in record and report work.

(a) Method of procedure.

The specialist will go over records and reports with the leaders and agents and make such helpful suggestions as are needed. Where incorrect procedure or interpretation is being followed he will advise the agent as to the best procedure. The value, need and use of the records will be explained so that the agent may better appreciate them and use them to better advantage in his work.

(b) Goal

The goals to be reached are:

1. More complete records.
2. Promptness and accuracy in submitting reports.
3. Better understanding and appreciation by agents.
4. Better use of records by agents.

(c) Measure of results.

The results will be measured by:

1. The accuracy and completeness of records and reports submitted.
2. The regularity and promptness with which they are prepared and submitted.
3. The number of agents who improve and use records and reports.

These results will show from an analysis of the present record system.

D. To assist in properly training, equipping, maintaining and inspiring the personnel.

(a) Method of procedure.

The specialist will give each agent such advice and assistance as is needed and as time permits. Where it is a case of the agent being weak in some phase of the educational work, the specialist will assist in supplying the agent with the material and instruct him in its use. To successfully carry out this part of the program it is necessary to treat each agent individually. Much information concerning the agent can be obtained from his monthly and yearly reports, more has been gotten from visits and still more will be gotten by further visits. A two or three day visit to the agent will show his needs and weaknesses and much assistance can be given him then and by correspondence later. The specialist can take new agents with him on trips through parts of the state, giving instruction on the disease and damage, illustrating by examples in the field, visiting agents to get ideas and inspecting crews and scouts and

their eradication work. The specialist should maintain a good correspondence with all members of the personnel.

(b) Goal

The goal is to have a thoroughly trained, well equipped and loyally inspired personnel. Reduced to definite terms we want to obtain this year:

1. All agents thoroughly trained in;
   (a) Conducting a well balanced educational program.
   (b) Supervising eradication according to best approved methods.
   (c) Efficient checking of eradication.
2. Every agent be equipped with;
   (a) Rough pine survey of his district by April 15, 1924.
   (b) Complete maps of his district by May 1st.
   (c) Salesbook by June 1st.
   (d) Set of exhibit screens, photos, riker mounts, and canned specimens by Sept, 1st.

We have others in mind but these are essential.

Present status in relation to goal.

Less than 25% of agents have a well balanced educational program.
65% of the agents are well trained in Ribes eradication work.
35% of agents are poorly trained.
None of the agents have complete maps showing all phases of their work.
No agent has a pine survey of his district.
None of the agents have exhibit screens.

There are many other points but these seem to illustrate where we stand.

(c) Measure of results.

The results will be measured by:

1. The number of agents thoroughly trained in conducting a well balanced control program.
2. Number of agents supervising eradication according to the best approved methods.
3. Number of agents effectively checking eradication.
4. Number of agents replaced for inefficiency.
5. " " " completely equipped.
6. " " " starting and completing pine survey.

E. Study problems, investigate, develope and suggest ideas and methods methods of improving the work.

(a) Method of procedure.

The specialist will analyze the data which is available and make plans and recommendations accordingly for improving the weak points. He will continue the study in the dield by personal visits to leaders and agents and try to secure data available from other sources. As information is received he will make it of use to leader and agents.

(b) Goal

The goal is to secure all possible data and to bring about the application of these ideas and methods of improving weaker phases of the work so as to raise it to the highest possible level of efficiency and accomplishment.

(c) Measure of results.

The results will be measured by the amount of data secured, the number and nature of improvements, the degree of efficiency attained and the increased productiveness of the organization in securing general control of the disease.

F. To aid in coordinating and developing the work in his district so as to accomplish the general control of the disease within the eight year program.

(a) Method of procedure.

This is one of the most important parts of our program because it is the ultimate result of all our efforts, namely effective protection of the pine in the specified period. Attention will be focused on ways and means to conserve the available funds by improving inefficient methods and by eliminating wastes, and to secure cooperative control funds from more towns and individuals. The plan of work for the state when completed should provide measures to secure these results. A way must be found in Maine and New Hampshire to secure cooperation annually from more towns and individuals if the work is to be completed in six more years.

(b) Goal.

The goal to be reached:

1. In New Hampshire is to eradicate 453,133 acres in 1924 and complete by 1930.
2. In Maine is to eradicate 632,452 acres in 1924 and complete by 1930.

Present status in relation to goal.

New Hampshire eradicated 267,010 acres in 1923 making a total of 1,041,619 acres. Maine eradicated 336,452 acres in 1923 making a total of 712,411 acres for all years. Further statistics are prepared to show the need of increasing the annual acreage in order to complete the work in the prescribed time.

(c) Measure of results.

The results will be measured by the;

1. Number of acres eradicated by the states in 1924 and completing the program by 1930.
2. Number of acres of pine protected by the states in 1924 and completed by 1930.

G. To develop the closest possible cooperation between the cooperating agencies in order to utilize the facilities of these agencies to their fullest extent.

(a) Method of procedure.

Through personal contacts with cooperating parties the specialist will endeavor to bring about the fullest utilization of all these agencies. Many of our agents do not have the best cooperation with the Farm Bureau offices, others which have it are not using it to the greatest advantage. There are ways in which the State Forestry Department might give occasional assistance by using its personnel. Few of the agents appreciate what the Federal offices can do for them. The specialist will endeavor to bring all these agencies closer together by finding out how they can cooperate and devise and suggest ways to accomplish it.

(b) Goal.

To be reached this year;

1. Closer and frequent contact of blister rust agent with county agent by means of office space in the Farm Bureau office.

2. Secure blister rust or forestry space regularly in the Farm Bureau News.

3. Secure one field demonstration with county agent in each county.

4. Equip every agent with material available in Washington.

5. Securing of definite suggestions for improving the work from all cooperating parties.

Present status in relation to goal.

65% of agents have office space in Farm Bureau.
7% cannot.
28% should have office space.
7% have permanent forestry and blister rust space in Farm Bureau News.
43% have regular forestry and blister rust space in Farm Bureau News.
50% have irregular forestry and blister rust space in Farm Bureau News.
50% have had field demonstrations with county agents.

(c) Measure of results.

The results will be measured by;

1. The number of agents having office space in Farm Bureau.

2. The number of agents inserting news items regularly in Farm Bureau News.

3. The number of agents holding field or indoor meetings with county agent.

4. The number of agents having all available material from all available sources.

5. The number and value of suggestions for improving the work received from coop. parties.

H. To make local field studies and to work up data in suitable form for use of personnel.

(a) Method of procedure.

The agent will be responsible for finding at least one and preferably several places in which plots may be laid out. The agent and specialist will together select the plot, make the study and prepare the data for use. In this way each agent will get experience in the different phases of the work and with the instruction given him by the specialist should be able to lay out additional plots himself.

(b) Goals.

This year-

1. To lay out and study 2 plots in each district.
2. To prepare the data in suitable form for the use of agent.
3. To see that use is made of the data obtained, and to make it of use in other districts and states.
4. To teach each agent methods of securing such data.

Present status.

One agent has 3 one acre plots.
Three agents have 2 one acre plots.
Three agents have 1 one acre plots.

(c) Measure of results.

The results will be measured by:

1. No. of plots laid out and data secured.
2. No. Districts having study plots.
3. " " " data prepared and in use.
4. The number of agents who use experience and information on methods to secure additional plots.

I. To prepare educational data for agents use, and to assist in general educational work.

(a) Method of procedure.

The specialist will first ascertain through the leader and agents what educational data the agent has, what and how he is using it and make a

study to determine the effectiveness of this data. It will be necessary for the specialist to visit each agent and get the information and make observations in the field. When all the available information is obtained the specialist will prepare educational data and material designed to meet the agents needs and then assist him to make use of the data.

The purpose is to develop something new and attractive so that the attention of the public will be gained and maintained. In many cases it may be necessary to bring out entirely new ideas, while in others new dresses may be sufficient on the old ideas.

(b) Goals.

The goals to be reached this year are:

1. To prepare and present to each agent at least one suggestion for a news item and method of presenting it.
2. To give each agent at least one new idea for a window display and help him to put it up.
3. To give each agent at least one new idea for an exhibit with plans for showing it.
4. To present plans for at least one roadside demonstration and assist agents in establishing one in as many districts as suitable places can be found.

(c) Measure of results.

Results will be measured by:

1. Number of news items prepared for agents.
2. " " window displays prepared for agents.
3. Number of exhibits prepared for agents.
4. Number of agents using these.
5. Number of roadside demonstrations.
6. Number of agents having roadside demonstrations.

This plan is by no means considered complete for the specialists personal use. A great deal of additional detail will need to be incorporated in it, to show the projects that will be undertaken in each state and district. Such a plan would be of value to each state leader who is as much a specialist as is the specialist, but who lacks the time to devote entirely to this work.

RESPONSIBILITIES AND OBLIGATIONS OF EMPLOYEES

by
H. E. Allanson,
Bureau of Plant Industry, U. S. Dept. of Agriculture

To an organization with the esprit de corps and record of accomplishments of the Blister Rust Control workers, a subject such as has been assigned to me would appear superfluous. I have been asked to speak rather, I am sure, that I might perhaps give you a little of the outline of the organization of your headquarters, perhaps discuss with some of you men individually some of the problems you have to meet, and perhaps, more than for any other reason, in order that I might learn from you here and you later get the benefits of a better knowledge on my part of the practical problems of blister rust control the field men have to meet.

The Washington end of things to the field men all too often is an abstract sort of a place where he sends letters and sometimes gets a reply, a sort of brake, a machine-like sort of a proposition that cold-bloodedly deducts from his accounts anywhere from thirteen cents to as many dollars for excess expenditures for anything from laundry to storage of automobiles, and never adds anything to the account. It is made up of the men you know, who are really human beings, sympathetic and constructive, and the ones you don't know, who are usually vague, indefinite, but omnipresent machine-like individuals, unsympathetic, uninformed on the work, and generally reactionary, who somehow are just where they can't be reached but very real as they are always the ones to blame for this or that calamity in the progress of a reimbursement voucher.

And yet, in spite of their reputation, in spite of the evidence, these men at headquarters are really quite human. Contrary to the popular conception by the field men, they put in a good day's work each day, they do their best to help the field men get back all possible from their accounts and as quickly as

possible, and they understand and sympathize with them in the problems they have to contend with.

Perhaps a skeleton outline of the organization of the Department would not be amiss. There is the Secretary of Agriculture and the Assistant Secretary, and the Directors of Research, Regulatory Work, and Extension. There are seventeen bureaus, boards, and offices reporting directly to the Secretary. The Research, Regulatory, and Extension activities of the various bureaus and offices correlate through the offices of the respective Directors. The Bureau of Plant Industry is one of the larger bureaus of the Department. Its personnel varies from approximately 1,700 in midwinter to a maximum of 2,300 in midsummer, when its activities are at a maximum. Its appropriations for the current fiscal year total approximately three and a half million. The Bureau consists of the Office of the Chief and thirty offices conducting various plant activities, the Office of Blister Rust Control being one of these offices.

We are all one great, big firm, big in numbers, big in the volume of our undertakings, and big in the area we cover. And right there many of our difficulties lie. The quantity of work, the enormous volume resulting from steady streams pouring in from every section of the country into the one headquarters, makes organization imperative. It is like the down-town traffic of a large city, streams of people afoot, in automobiles, cabs, street cars, trucks - a multitude of humanity in all kinds of vehicles. If the traffic is well organized, the crowds move systematically with little loss of time; if not, chaos results, with a traffic jam, the proportions of which depends upon the amount of disorganization. There is traffic direction of all sorts, - signs, lights, ropes, railings, policemen. The fiscal and administrative regulations of the Department are the traffic guides that direct the volume of business necessary in the activities of the Department of Agriculture. Just as surely

as a pedestrian, straying out of the prescribed paths, is caught in the vehicular traffic with disastrous results to himself and a tie-up of traffic affecting all, just so surely does failure to observe departmental rules and regulations result in difficulties for the individual and a general disturbance and slowing up in the forward movement of all business traffic.

Point of view has a tremendous effect on this matter of rules and regulations. If we make up our minds that a thing is bad, of course it's bad. I have little sympathy for the man, who as a member of the organization spends perfectly good energy in lambasting "Red Tape". We are trustees of public funds, and it is to be expected that certain safeguards will be required that an individual handling his own funds would not exercise. The man who complains about "Red Tape" would be the first to criticize a lack of checks and balances, of reasonable supervision over the public's funds. We must remember that all Government funds are paid out by one agency, the United States Treasury. Manifestly, one set of rules only would be practicable. If one agency were granted a special set of regulations, a precedent would be established, and the net result would probably be a different set for each of the many agencies expending funds. Obviously this would be impracticable and undesirable. Each department makes such additional regulations, not inconsistent with those of the Treasury, as may be desirable in the administration of its work.

No apology should be made for the rules and regulations of the Department of Agriculture. It is my experience that more delay is caused by failure to give complete information when transmitting an account or a recommendation than for any other single cause. We find it important with respect to all matters of Department business to have each thing self-explanatory when it goes through. A transaction which may appear to be erroneous, irregular or

illegal often may be satisfactorily explained later but the explanation always lags behind the criticism, never receives the same distribution, and never corrects the harm that has been done. It is our effort in the business administration of the bureau to have every transaction self-explanatory as it goes through. If a person uses good common sense in his business dealings, and then passes on to us full information as to the factors involved, he will find the bugaboo of regulations rapidly disappearing. Also, if he will then mix with that common sense just a little study of the regulations, his troubles on that score will rapidly become history.

In an organization like the Department of Agriculture, it is imperative that the work be conducted in an orderly fashion, complying with such laws as may be passed by Congress and with such regulations as may be issued by properly constituted officials. These laws and regulations are condensed and put in handy form for use and guidance of employees as the Administrative and Fiscal Regulations. They are sign-posts directing the way in order that all laws may be faithfully complied with, uniformity in procedure established permitting efficiency and expedition in handling a volume of work. They are made to help, not hinder. They are all made by some agency or individual who is a member of our firm, equally interested with us in so conducting our work as to insure its integrity and efficiency. Perhaps, in some cases, we do not understand why they were made, what good purpose they serve. We must remember again that the Government is a big business, expending the current fiscal year a total of 3.5 billion dollars of which the Department of Agriculture expends about 70 million dollars, and that some rule we may not need and that may not be helpful to us is serving a real purpose in some other branch of the organization. If a particular rule is not clear, let us know and we will try to explain it; if it appears to hinder instead of help, call it to our attention and we will see what can be done about

it. But let us carry out faithfully the instructions given us by those responsible to the people, and who will be held to an accounting.

Perhaps a word as to just what happens to your accounts, how they are handled, would not be amiss. When they come to Washington, your own office gives them a review, based on their intimate knowledge of the requirements of the work. They furnish supplemental information when it is needed and they have it available, make such analyses as may be helpful in the administration of the blister rust work, and send them on to the Bureau accounting office. Here they are audited, sent to the Chief of Bureau for approval, and on to the Disbursing Clerk of the Department for payment. A check is sent you, and they go to the General Accounting Office for final settlement by the Comptroller. The Comptroller. The Comptroller's word is final. His decisions have the effect of law, and only a reversal on his part or an act of Congress can change them. When he turns down an account, the money to reimburse the Government must come from somewhere. If it cannot be collected from the source of the original expenditure, the officer who made the payment, and who is bonded, must make good. This naturally tends to a degree of care and conservatism in the auditing of accounts.

When you prepare your accounts for submittal, always remember the final word will be spoken by skilled auditors, but men entirely unfamiliar with the conditions under which the work is done. This is, of course, unavoidable and to be expected. Prepare your accounts so as to be self-explanatory. If an unusual item gets by once without explanation, don't use that as a precedent and try it again; rather, congratulate yourself on the accident and furnish the information necessary to an understanding when sending in another comparable item.

You have no doubt heard much of the need for economy these past few years. And you would have heard more of it had you been with us in Washington.

The Bureau of Plant Industry has fortunately always had the wholesome urge of limited funds subdivided into small allotments, with the individual research workers facing a demand for assistance entirely beyond his capacity with the funds at his disposal. With the war came a depreciated dollar, and we became accustomed to paying more for what we bought than had been our custom, alike in the expenditure of private as well as public funds. The emphasis that has been put on economy has been productive of excellent results, and altogether wholesome. Here and there we have had a little confusion as to what constituted economy. With us, we have tried to make economy mean to get more done with every dollar we spent and save as many of them as we could when it could be done with justice to the responsibility of the work with which we are charged.

More and more the emphasis is being put on increasing the returns in every dollar expended. We are scanning our purchases as never before. At a recent meeting of the Business Organization of the Government, the Director of the Bureau of the Budget called attention to the enormous expenditures annually for travel, transportation, and telegraph, and requested that every effort be made to give these items a careful study during the year, with a view to their reduction whenever possible without detriment to the work. In the Bureau of Plant Industry last year, we expended over half a million dollars for travel, of which seventy-five thousand was expended incident to blister rust control. A total of thirty-five thousand dollars was expended for transportation, of which sixteen hundred dollars was expended in this work. And for telegraph, we spent nearly five thousand dollars, of which seven hundred and fifty dollars was incident to your activities. Surely, with expenditures of this size annually for these three items alone, the most careful scrutiny and study is not only desirable but imperative. Care in planning travel, foresight in our needs for supplies, permitting the use of more freight and less express, foresight in our communications, with more corres-

pondence and less telegraph, more night letters and less day-rate telegrams, is our opportunity for reducing these expenditures.

You men, engaged on cooperative activities, have many problems peculiarly your own. You have a joint responsibility to Federal and State Governments, and it is your obligation to carry out faithfully alike the regulations of both. The point of view of many to the Government will rest upon your conduct of the responsibilities with which you are charged. An individual can do much good or much harm through the reputation he makes both in the efficient conduct of his work and personally. Impressions of Federal Government, far reaching in their effects, are frequently determined by a few individuals engaged on government activities who may be stationed in a locality. The reaction may become effective in various ways, through the press, from constituents to Members of Congress, to Members of Congress direct, with direct results, beneficial or injurious to the work as the case may be.

All those concerned with the administration of the work of the Bureau of Plant Industry heartily welcome constructive criticism. The field man is in a peculiarly good position to submit helpful suggestions. A criticism should whenever possible be supplemented by a constructive suggestion. We are not interested in getting things by; we are interested in getting things done. There are usually two sides to every problem. In submitting your problems, bring out both sides of the case, and then show why you make the recommendation you do. You are members of the firm submitting briefs; not litigants presenting one side of a case. Help us to make the whole organization what it ought to be. Pride in our organization begets the respect of others. A man who is apologetic for the organization of which he is a part is wrongly placed.

The thing I would like to emphasize is that we are all members of the same firm, all interested in the same goal, simply functioning in different capacities.

I know I speak for all of us when I say that we are heartily with you in your work, doing everything we can to make your problems simpler and your work more effective. Our problems are not simple. Perhaps at times you think you are loaded down with new things to do and new ways to do old things different. We invite you to come and spend a few days with us. We would delight in introducing you to the intracacies of the estimates in their devious route from the office, through the office of the Chief of Bureau, the office of the Secretary, to the Bureau of the Budget, to Congress, through the House Committee, on the floor of the House, to the Senate Committee, on the floor of the Senate, to the Conference Committee, then back to both House and Senate, to the President, and then back to us in time to start all over again. Arguments, data, explanations, hearings, memoranda, statements, statistics, tabulations. When you have become an accomplished budget officer, we will give you a turn at reclassification. First you read several hundred job descriptions submitted by the heads of offices demonstrating the virtues and accomplishments of the members of their staffs, and then you see them classified. Promptly you have requests for interviews by the heads of offices, and later by the individuals themselves, and you are told how utterly inadequate the grades assigned are. Finally, they go over to the classification authorities. And then you are again on the grill, defending the outrageously high grades being asked for the workers in the bureau, away above anything granted to any agency in the Government for similar work. And you marvel at how completely in the wrong in two directions it is possible to be at the same time. And, having become experienced in budget making and reclassification, you have still to commence the routine work, problems of planning the work to be done, employment, purchases, payments, space, distribution of information, correspondence, and a thousand and one other things - all in the day's work, and all necessary, each thing playing its part in getting things done, the things

for which our appropriations are made, the plant industry activities of which blister rust control is one.

Sometimes, perhaps, it seems to you as though the demand for information about your work, the preparation of reports, the compilation of data, is endless. This study of our work serves two conspicuously useful purposes. It keeps our future policies trued up with our accomplishments; it keeps us in a position to furnish to those who determine the availability of funds for the continuance of the work the information they must have in justice to their trust as to whether the results from funds expended warrant additional expenditures.

Before leaving Washington, the Chief of Bureau, Dr. Wm. A. Taylor, asked me to express to you workers in Blister Rust Control his best wishes, and to tell you how keenly appreciative he is of your splendid record of achievement. From the inception of this work, it has had to face apparently insurmountable difficulties. With its goal, the saving of the White Pine, a national problem of tremendous importance, involving close cooperation everywhere with State and local authorities and individuals, no untoward incident has ever marred its record. Clean, wholesome leadership, aggressive and self-sacrificing, has reaped its inevitable reward of assembling like-minded men and inspired them to carry on. Personally, I wish to add my own good wishes, and to express my appreciation of the opportunity I have had of meeting here with you. I want you to feel assured you will always have my hearty cooperation in the splendid work on which you are engaged.

White Pine Blister Rust in Canada.

by
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Dominion Botanist, Ottawa, Canada.

In Eastern Canada.- As in previous years a check was kept upon the distribution and degree of severity of the rust in the several eastern provinces. In Prince Edward Island the disease was again present on cultivated black currants at Charlottetown. Very little white pine was found anywhere on the Island and none was infected. In Nova Scotia rust on Ribes was present in the same general localities as reported last year and in addition infected pines were found at River John, Weymouth, and Springfield. Infection of Ribes was found to be fairly general in the south-eastern portion of New Brunswick and diseased pines were observed at Fredericton and Little Shemogue. The cankers both on these trees and on those found in Nova Scotia were mostly four years old. Rust seems to be firmly established in the Maritime Provinces.

In Ontario during the early part of the season a good deal of scouting was done in the Rainy River district, especially along the international boundary east of Fort Frances, but no rust was found on either host. Some of the finest stands of white pine left in Ontario are located in this district and they should be kept under observation each year for the advent of rust. Since the disease is already present in Minnesota not far from the border it may be expected that it will appear on the Canadian side of the line at any time. The remainder of the season was spent along the Ottawa river in Renfrew county and in the district of Nipissing where rust reaches its northern limit of distribution in Ontario. The disease is known to have been present on Ribes in several localities in this district for at least four years but no infected pines have ever been observed. In examining one of these known points of infection - Pembroke - this year over 1100 young white pines growing close to diseased Ribes were carefully gone over

but none were found affected. In some cases infected Ribes were growing in the shade of small pine trees and although the latter were examined with particular care no infections were apparent. Also at Petawawa nearly 900 young pines growing in the vicinity of diseased Ribes were inspected but without finding any affected by rust. North-west from Petawawa rust was found for the first time in the following localities - Chalk River, Dominion Forestry Branch Experimental Station near Chalk River, near Moor Lake station, Rapides des Joachims, Mackey, Stonecliff, and Deux Rivières in Renfrew county and Mattawa, Agnone and Radiant in the district of Nipissing - the latter two points being in Algonquin Park. Infected Ribes were also found at several points across the river in Quebec.

In British Columbia.- The work of the present season was for the most part confined to the interior of the province and consisted mainly in scouting to determine the distribution of blister rust. Unfortunately the disease was found to be very widely spread.

For purposes of inspection the interior was divided into two parts - the Dry Belt and the white pine belt. In both cases these districts included only the county lying south of the main line of the Canadian Pacific Railway. Work was first commenced in the latter region as it was in the Revelstoke - Beaton - Canoe area that rust was found last fall. At that time fourteen cases of pine infections were located and destroyed. Rust in cultivated black currants was very prevalent and severe while native Ribes were but lightly infected except where growing in close association with diseased pines or black currants. Ribes infection was found over a much more extensive area than pine infection. In general it may be said that in the white pine belt rust is present throughout the valley of the Arrow lakes and it has also been found at Nelson on Kootenay lake.

Scouting in the Dry Belt revealed the fact that throughout this area Ribes were generally infected. Since five-leaved pines occur very sparingly in this region, being absent altogether in many places, it had been expected that the Dry Belt would prove to be an effective barrier to the dissemination of rust from the coast. However, rust was found from the main line of the Canadian Pacific Railway south to the international boundary. At Merritt, which is about the centre of this district, infection was very severe. Merritt is about 80 miles distant from the nearest known pine infection and 30 miles distant from the nearest known five-leaved pine, there being a small stand of white-barked pine (Pinus albicaulis) on the top of Mount Kanaka to the south-west.

In view of the fact of the wide distribution of rust in the interior and the lack of evidence of importation of either pines or Ribes, the possibility of the fungus having spread from the coast by means of aeciospores had to be considered. The production of aecispores was very heavy in the coastal section during the years 1916, 1917, and 1918 and the age of the pine infections found at Canoe, Revelstoke, and Beaton correspond to this as they mostly originated in 1917. In order to gather additional evidence as to the possibility of long distance aecial spread a trip was made up the coast beyond the northern limit of distribution of white pine. At Alert Bay, 190 miles north-west of Vancouver, which is as far north as white pine occurs, infection was found on cultivated currants. The next point inspected was Namu, 90 miles north of Alert Bay. Here no cultivated currants could be found but rust was observed on native currants (Ribes bracteosum). Bella Bella, 30 miles northward, was next visited. No cultivated Ribes were seen here and very few native Ribes. However, at an old Hudson's Bay post in McLachlan Bay, two miles south of Bella Bella, twenty black currant bushes were found in a deserted garden. These plants were quite

heavily infected and subsequently along the shore several plants of a native species (Grossularia divaricata) were observed to be diseased.

McLachlin Bay is about 110 miles north of the limit of white pine (Pinus monticola) and about 100 miles west of the limit of white-barked pine (Pinus albicaulis). The probability of the occurrence of planted five-leaved pines in this wild, unsettled country is very slight. To account for the presence of rust in this remote locality one must either accept the hypothesis of long distance, aecial spread or assume that rust has reached this point by uredinial spread and is perpetuating itself by overwintering. That this fungus can live over from one year to another upon Ribes under the conditions obtaining in the eastern United States and Canada has been conclusively demonstrated, and there is no reason to suppose that such would not be the case upon the Pacific coast where conditions are, if anything, more favorable for this mode of passing the winter. As yet there is insufficient evidence to justify a conclusion as to which of these explanations is the correct one to account for the occurrence of rust so far beyond the range of five-leaved pines.

Apart from these observations very little work was done in the coastal section of the province. Rust is very prevalent on both hosts throughout the area in which white pine occurs and at several points, notably Daisy Lake and Thurston Harbour, it has reached the epidemic stage. One point of interest in the life history of the fungus was noted when closed blisters were collected on March 17th near Murrayville in the Fraser valley. This is apparently considerably earlier than this stage of development has been previously observed in North America although according to Spaulding* closed blisters occurred in France in 1918 on the same date. As a further illustration of how widely the

*Spaulding, Perley. Investigations of the White Pine Blister Rust. U. S. D. A. Bull. 957: 1 - 100. Fig. 1-13, Pl.1-6. 1922.

life history of rust differs under conditions on the Pacific coast from the usual sequence of events as they occur in eastern Canada it may be mentioned that on October 28th a fruiting canker on a white pine was found at Nakusp on Upper Arrow Lake.

Last year a small white-barked pine (Pinus albicaulis) growing in the arboretum of the provincial university at Point Gray, was observed to be affected with rust in the swelling stage. During the past summer numerous pycnia were produced and on April 8th of this year aecia began to break through the bark of the stem, spreading up the branches of the growth of 1919.

The experimental plots established at Daisy Lake for the purpose of studying the relative susceptibility of all native species of Ribes and five-leaved pines was maintained and added to this year. No results from this work are available yet.

As usual, the provincial Forest Branch co-operated with us in carrying on our field work and valuable assistance was also given by the Air Board through the Jericho Beach Air Station at Vancouver, Certain of the Vancouver daily newspapers continued to take an interest in our work and desirable publicity was accorded it in this way.

EDUCATIONAL MATERIAL FOR BLISTER RUST CONTROL

By

R. G. Pierce

Office of Blister Rust Control, U. S. Department of Agriculture.

During the past year, 1923, the aim of the Office of Blister Rust Control in supplying blister rust educational materials has been threefold, first to supply materials to the State Leaders and Blister Rust Agents for their own use, second to supply through the Blister Rust Agents material for the public's use, and third to supply the public direct with blister rust material, when called on.

A summary of blister rust materials supplied will indicate the extent of this service:

To each State Leader And Blister Rust Agent

8 - Clip Sheets containing 15 separate articles varying from 5 lines to 2 pages.
6 - Circulars and Bulletins (4 on forestry
(1 on extension
(1 on forest insects
8 - Mimeographed articles (5 on white pine
(2 on extension
(1 on Ribes substitutes
5 - News Letters

To Field Men as a Whole

300 - Circulars and bulletins

2 - Sets of cuts for illustrations

13 - Sets of Lantern Slides

1638 - Photographs

26 - Sales Books

To the Public

3875 - Circulars and bulletins for distribution by blister rust agents.
30 - Sets of circulars and bulletins sent direct to the public.
3 - Box and panels exhibits.
100 - Posters.
6 - Sets of specimens

The above is past history. Now as to the future, what is the Office of Blister Rust Control planning for the field men? Among the new things are the 3 wing panels, which I think you'll admit when you see them are pretty good. They are for window display. Twenty of them are already made and need only the photo enlargements pasted on to be ready for distribution. The Office of Illustrations is now on this job. If they are just what is needed - 20 more will be made. Photographs of these panels are here.

Charts have never been used much by us, but I believe there is a place for them in blister rust work. What the charts should represent I am not prepared to say. The Extension Service uses a great number of charts. Your ideas are wanted as to charts your men need. A good chart size is 36" wide and 44" long.

Mr. Fivaz has suggested a new service, that of supplying cuts for illustrations. A list of cuts now available will be prepared and may be inserted in the next issue of the Blister Rust News.

I believe that the field men do not realize to what extent the Office of Blister Rust Control can serve them in preparing blister rust educational materials. Let me illustrate. We have over 2200 photographs of the rust, the white pine, Ribes and control work. Mr. Barraclough has just requested lantern slides of photos taken in his county, and these are now being prepared. If you have taken good photos of rust conditions in your county, or fine white pine stands protected from the rust or similar subjects, slides can be made from these negatives. We have white pine and Ribes specimens on hand, which can be sent out to teachers; circulars and bulletins, photographs and maps which are available for blister rust agents or the public.

There are also available 6 blister rust films which may be secured, as well as other forestry films. To be entertaining as well as instructive it is

advisable to show other films in addition to those on the blister rust. Two new blister rust films are being planned for this year, one on the life history of the rust, and the second a film with a simple plot showing the damage from the disease, urgency of control, and methods of control.

Now a word or two in regard to the Blister Rust News. This is your own house organ, a medium for the exchange of ideas and news. If you have new ways of doing things let us know about them and we will see that they are passed on, through the News. There are valuable ideas or statistics in every issue. Have you ever thought of using them?

Mr. H. W. Hochbaum of the Extension Service has likened educational materials and agencies to a "Kit of Tools", to be used to forward the particular piece of work on which you are engaged. No one tool fits all jobs. Some of the tools get rusty from disuse. Some need to be sharpened since they have been used too long. But every one of us needs to know the possibilities in these tools, and to keep them in mind in planning particular pieces of work.

Let me give in closing a partial list of materials and means, which may be found in this Kit of Tools.

Automobile tours
Charts
Circular letters
Circulars and bulletins
Contests, leaf guessing, etc.
Currant and Gooseberry eradication bees, say in connection with boy scouts planting a town forest.
Cuts for illustration
Demonstration areas
Exhibits, both temporary and permanent.
Field meetings
Interviews, personal
Lantern slides
Lectures
Mailing cards
Maps
Motion pictures
Newspaper articles, clippings and fill-ins such as the Clip Sheet

Photographs
Posters
Prizes for best essays in schools
Radio talks
Road signs
Sales books
School campaigns
Signed statements by authorities, or leading townsmen
Slogans
Specimens
Signature cards, such as B R E 13

The Office of Blister Rust Control is always open to suggestion, and will supply the materials desired as far as possible.

ANALYSIS OF THE RECORD SYSTEM.

By
A. E. Fivaz
Office of Blister Rust Control, U. S. Department of Agriculture.

Our proposition today is not the revising, changing, or elaborating of the record system. We have a practical, well-coordinated, carefully-planned, and useful set of forms. Like a new invention given its initial trial, the new record system we have used the past few months has shown that IT WILL WORK. - Our next job is to put it to work.

I say this with reservations, for even now the record system is working. The installation of a new heating plant is one thing, but bringing it to its capacity efficiency is another. This involves the training of the working force in proper usage, and comes only after experience has grounded firmly the training the men receive. We are now in the process of learning the proper usage of the record system. What are its uses?

We are too much inclined to think that this record or that record is for the exclusive use of someone higher up, that it needs to be done just because someone in authority wants it. Late in 1923 I was unexpectedly asked to write an annual report. My first thought was practically this: "What do they want an annual report from me for I've done my work conscientiously, I've sent in periodical reports covering it all, - its more work to report what you do than to do it." Of course I wrote the report. My personal copy of it is already well worn from the use I have made of it. I believe that next year I can turn out much more and much better work simply because I analyzed a written summary of my year's work. And I don't plan to file that report until the next one is written. May I say that every record and report we make out is especially valuable for home consumption.

This is what they can do for you:-

1. They furnish a concrete basis for analysing the efficiency of our organization.
2. They furnish material for reports to superiors, cooperators legislators, and others, as well as material for articles or talks.
3. They furnish a basis for the planning of future work.
4. They furnish proof that work done justified expenditures.
5. They form a basis for requests, facts on which to base claims and statements, support to requests for appropriations, for changes, etc.
6. They give self confidence and assurance.

Their use in analysing the efficiency of the organization is the only one which I will explain further, because it is the most valuable and the least used of all of them.

There are two ways to increase sales; one is to put on more salesmen, the other is to put on more steam. This applies directly to our work. In our administrative capacity as state leaders, specialists, and office heads, it is our job to "put on more steam". Steam is wasted unless it is applied where needed- the question we face is

WHERE IS IT NEEDED?

The records and reports of our organizations are invaluable in showing where steam is necessary. I do not mean to say that from these only can we answer this question, for a close personal contact with the field organization is equally essential. But our organizations are so extensive geographically, and consequently our field contacts are so few and irregular, that only in periodical records and reports from the members of our forces do we have a means of keeping their work at our fingertips for the better supervising of it. To illustrate, let us take some of these records and reports and get down to specific cases.

(At this point, some of the actual reports of field men were analysed. Mr. Fivaz says that these were from several of the cooperating states, and that each example was an actual case as stated.)

The present system of records is a complete chain beginning with the Agent's BRE1 and the Foreman's BR1, right thru to the Annual Report to the Bureau of Plant Industry by the office of Blister Rust Control. The entire system is moored at its beginning, in the Blister Rust Control Agent and the Crew Foreman. Their reports and records form the essential basis for the whole system, and when these two individuals fail to correctly, completely, and promptly make out their forms, the rest of the organization, altho trying desperately to bridge the gap, fails in accordance. Because of long usage, the Foreman's reports do not now cause a great deal of trouble generally, but the filling out of the Blister Rust Agent's reports is still far from perfection. So it is up to us to strengthen this one weak link so essential in our chain of record keeping.

Delay, errors, and omissions in the Agents' reports and records may be the results of two factors: Misunderstanding and Carelessness. Misunderstanding is easy to correct, and little trouble is now traced to it alone. Carelessness is a different proposition, but there are ways of correcting that too. As many industries and business firms have discovered, Authority alone will not do it, Education must be used first.

We must show the Blister Rust Agent the need of all records and explain the ways in which they are used. We can increase his responsibility by showing him where he can use them to analyse and improve his own work and thereby better himself. All mistakes and ommissions should be checked up immediately and the Agent shown that we mean business in going after good records. As leaders of these men we must champion the record system, else we cannot expect them to respect it by doing their bit towards it promptly, correctly, and carefully.

In conclusion, I reiterate my two points:-

The use of records and reports in analysing the efficiency of our organizations, keeping at our fingertips the progress of each employee, and thereby better supervising our work and personel, is the most valuable and the least applied of the six uses of this system. Records are not for storage, they are for study.

The path to accurate, complete, and prompt records is by the way of Education of the Blister Rust Agent in their use and importance.

THE RED CURRANT QUESTION

by
Haven Metcalf
Office of Investigations in Forest Pathology, U.S. Dept. of Agri.

Instead of talking on the subject assigned to me on the program, it will, I think, be more profitable to spend the limited time available in discussing a question that has already been the occasion of much discussion and correspondence, namely, should any concessions be made in favor of red and white currants and gooseberries in view of the well-known fact that taking these currants as a whole they are less susceptible to blister rust than the black currants. I feel strongly that discussion will clear our thoughts on this question and I believe we shall all come to the same conclusion without finding it necessary to undertake any new investigations or invoke any knowledge except that which we have had for some time. I feel that a large part of the agitation in favor of letting up on red currant requirements is due to the tendency to compare the red currant with the black currant, whereas the real issue is its comparison with the wild currants. So far as New York and New England are concerned the black currant is already a dead issue.

In my discussion at this conference last year, I said "It is necessary to know the exact varieties of cultivated Ribes involved, as profound differences in the susceptibility of varieties of the same species have been demonstrated". In amplification of this, let us now turn for a moment to that familiar mine of information, Dr. Spaulding's Bulletin No. 957. If you glance over the tables on pages 18 to 22, you will notice great differences in susceptibility between the different species, considering the species as a whole. It is somewhat difficult to grasp these differences in a long and complicated table but they become clearer upon consulting the following chart which expresses graphically just what is expressed in tabular form in Bulletin No. 957, with the addition of certain work since done by Hahn.

RELATIVE SUSCEPTIBILITY OF RIBES
As Indicated by the Results of Inoculation Experiments
(on scale in which XXX represents maximum susceptibility)

VULGARE AND ITS MOST IMPORTANT VARIETIES

(X) X XX XXX

Spaulding et al 109 inoculations

Hahn 117 "

VULGARE AND ALL VARIETIES TESTED

Spaulding et al 334 inoculations

Hahn 247 "

RECLINATUM AND IMPORTANT VARIETIES

Spaulding et al 40 inoculations

WILD RIBES OF NORTHEASTERN REGION

Spaulding et al 154 inoculations

Hahn 79 "

FLOWERING CURRANTS

Spaulding et al 111 inoculations

Hahn 15 "

NIGRUM

Spaulding et al 77 inoculations

NIGRUM-NAMED HORTICULTURAL VARIETIES

Spaulding et al 181 inoculations

We notice at a glance that the red currant and the gooseberry are somewhat less susceptible than the wild currants and much less susceptible than the flowering and black currants. This is when we consider the species as a whole.

However, a glance at the table shows that there are some red currants quite as susceptible as blacks and some blacks which are no more susceptible than most reds. If we exclude in these tables the results based on single experiments and calculate percentages, we will find that 14 per cent of all varieties of black currant included, and 64 per cent of the reds alike have the rating X; that 14 per cent of the reds and 43 per cent of the blacks have the rating 2X, and 2 per cent of the reds as well as 25 per cent of the blacks have the extreme rating 3X.

It is then obvious that if we are to consider reducing the required distance between Ribes and pines or making any concessions in favor of any one species of currant we immediately face the fact that the species is not uniform. We must, in other words, base any such action on varietal, and not on specific, differences in susceptibility.

So far we have been considering susceptibility alone, but there are other factors which determine the effectiveness of Ribes as infecting agents. These factors are very complicated in themselves and considerably complicate our argument. We may briefly consider them:

Shorter infection period of reds. It is well known that while some currants, for example, the black, continually put out fresh leaves, the red currant under ordinary conditions does not do so and therefore has an infection period of from one to three weeks against an infection period of two to six weeks and longer in the blacks. The red currants are in general subject to early leaf fall, whether due to dry weather or to anthracnose and similar leaf diseases (a peculiarity that is shared by some wild species). Under cultivation, however, and especially when well cared for, the red currants tend to sprout and produce new leaves through a longer period; if the land is well manured the leaves of the whole plant remain susceptible longer.

Cultivated currants are grown mostly in groups and hence their mass effect may be greater than more scattered Ribes which are more susceptible. This, however, may be slightly offset by the fact that when cultivated in quantity red currants are rarely grown in the shade. Shade is of course more favorable to the development of rust than sunlight.

Red currants are freely scattered by birds. I do not need to tell any of you who have scouted in New England how commonly this happens. There is nothing more characteristic in the scenery of many parts of New England than red currant bushes growing along the stone walls and in stone heaps. These seedlings usually occur in the shade and as a rule are found more infected than the cultivated bushes from which they came. These escaped seedlings do not necessarily reproduce the horticultural characters of their parents and the seedlings of red currants that are resistant to rust would not necessarily, or even probably, reproduce that character. This is one of the most serious arguments against any concessions in favor of the cultivated red currant. Any cultivated plot is the perpetual source for seeding-in by birds in the neighboring fields and woodland.

The exceptional year. In the ordinary year there may be profound difference in the behavior of red currants and other Ribes. In the exceptional year very favorable to infection there is much less difference. The black currant is infected to its saturation point in the ordinary year and in the exceptional year it cannot become much worse: but red currant can. In other words, the differences in susceptibility between all Ribes tend to disappear in the exceptional year. We know all too little about the exceptional year, how often it occurs and when. If we were dealing with an annual host we might afford to disregard the exceptional year or consider its economic treatment on some insurance basis, but pine is a perennial. The cankers produced

in the exceptional year remain on the tree.

Increase in general infection. In spite of all efforts we may make and in spite of how much territory we may cover in our eradication program, the total amount of infection and hence the total density of the cloud of aeciospores produced annually will probably increase. As this increases the different varieties and species of Ribes will tend to approach each other in susceptibility for the reasons stated in the last paragraph.

Effects of smoke. This is a consideration which rests upon such a limited amount of detailed study that I almost hestitate to present it. Dr. Spaulding, in his European investigations in 1922, observed that the blister rust could not be found in a number of localities where all conditions were apparently favorable for its development, for example, at the Botanic Gardens in Kew and Edinburgh. It developed that these localities were all under the smoke influence of a great city and this tied in with certain observations in this country, for example, the unexplained absence of blister rust at the Arnold Arboretum. If there is anything in the theory thus intimated we would expect to be able to check it up by carefully mapping the occurrence of blister rust in large cities like Boston, cities so large that there is obvious smoke injury to conifers and so large that the smoke is not quite driven away even by favorable winds. Until this theory has been checked up by such observations, it must be regarded as tentative. I bring it forward here merely to suggest that it may explain the reported freedom from blister rust of certain cultivated Ribes in certain situations.

Climate and soil. As I stated last year, it may not be without significance that the more striking reports of non-occurrence of rust on red currants appear to have come from Rhode Island and southern Massachusetts. Much of this

country is not "good currant land", whatever that may mean. It is certainly beyond the optimum range of most wild Ribes. We can imagine that this may effect the susceptibility of the Ribes. However, it is much more probable that the currants observed happen to be resistant varieties. That one or a few particular varieties should be commonest in a given section of country is easily explained. Prior to the great development of the mail-order trade considerable sections of country were mainly supplied by local nurserymen, who tended to specialize in a few favored varieties.

What then is our conclusion? Is it not simply that any change in our existing practice is impracticable? We are playing safe now: our business is to control the white pine blister rust. Let us attend to that now, and let any complicated refinements of method come later.

Of course if any section prefers to keep Ribes and disregard pine, such an arrangement is easily made, following the established policies of the State of New York. But that, as Kipling would say, is another story.

BLISTER RUST IN THE NORTHWEST

By
L. H. Pennington
State College of Forestry, Syracuse, New York.

During the years of 1922 and 1923 much work was done in the Northwest to determine the distribution of the white pine blister rust. This work was carried on by Mr. A. T. Davidson in charge of blister rust scouting for the Dominion Government of Canada, Mr. J. W. Eastham, Plant Pathologist of British Columbia, Dr. J. S. Boyce, Portland Branch of the Office of Forest Pathology, G. B. Posey, 1922, and S. N. Wyckoff, 1923, for the Western branch of the office of Blister Rust Control.

The rust appears to have been introduced into Vancouver B.C. upon Pinus strobus which were brought from Ussy, France, in 1910. There were 1000 of these trees originally. When they were examined in 1922 but 180 of them remained. Some of these had old rust cankers which had apparently originated in the growth of 1910. In 1913 the rust spread to other pines in the vicinity of Vancouver, as far as 60 miles north of Vancouver in the Cascades and as far as 125 miles to the northwest along the coast. There was a still greater spread to the north in 1917 and west along the coast practically to the northern limit of the white pine in the coast belt and to the east to the edge of the coast belt of white pine. It also passed over the Dry Belt in which there are no white pines and became established in at least three places in the interior belt of white pine. These places - Canoe, Revelstoke, and Beaton are from 150 to 200 miles from the nearest pines in the coastal belt. The most careful search by men, some of whom worked both in British Columbia and in Washington, failed to reveal but one infection south of the International Boundary line. This was a small branch infection upon a tree near Blaine in the northwestern part of Washington near the boundary.

During the summer and autumn of 1922 the rust was found upon different species of Ribes in the vicinity of infected pines in British Columbia. In some instances infected Ribes were found 15 to 20 miles from any known infected pines. In Western Washington particularly in the Puget Sound country and along the coast, infection was found upon Ribes as far south as the mouth of the Columbia River. Some of these infected bushes were found to - 25 miles from any known white pines and fully 200 miles from any known infected pines.

In 1923 infected Ribes were found in the following places: at Namu and Bella Coola 80 and 110 miles respectively north of the northern limit of white pine on the coast; near Port Townsend in Northwestern Washington at least 80 miles from any known infected pine; at 21 different places within the Dry Belt from 20 - 150 miles east of any pines; and at many places to the east of the Dry Belt from 150 to 200 miles east of the infected pines in the Coast Belt and 20 to 100 miles south of the centers of pine infection in the Interior Belt.

Infection was not found in southwestern Washington where it had been discovered in 1923. In many of the places in the Dry Belt and in the Inland Belt where infection was found in 1923 it was not present in 1922. R. nigrum was practically the only species found infected at long distances from infected pine.

Careful investigation failed to show any evidence that the spread of the rust has been caused by the shipment of either pines or Ribes.

Field observations and experiments failed to show any evidence of uredinial spread or of overwintering upon Ribes. With the single exception of the infection of Namu and Bella Coola none of the infections could have been caused by spores carried by birds. The birds do not migrate east and west and the Ribes infections to the south occurred after the birds had gone north and before they returned from the north.

All the infection can be accounted for by wind borne aeciospores. Moreover the difference in the distribution of infection in 1922 and 1923 can be explained by the difference in the prevailing winds during the time aeciospores were produced.

Notes by Secretary,
A. E. Fivaz
Office of Blister Rust Control, U. S. Department of Agriculture

Monday, February 18, 1924.

Doctor Gilbert opened the meeting at 10:30, A.M. Professor K. W. Woodward was unanimously elected "captain" or Chairman of the "team" and A. E. Fivaz "quarterback" or Secretary.

Doctor Gilbert in a humorous way showed that despite the fact that each state aims at self independence in necessities, all are closely interwoven in dependence. Also he followed a pound of steak through from the calf to the dinner, in its dependence on wood. Then he read his paper. He added one thought - the need for securing greater public appreciation of the work, especially by constant repetition of facts. This must be put in a popular rather than a scientific strain.

Doctor Gilbert had to leave the meeting due to other business. Chairman introduced briefly, Mr. S. B. Detwiler who read his paper.

Chairman opened meeting for remarks.

Doctor York questioned Mr. Detwiler's "interviewing in fall and winter." Mr. Detwiler explained that his point was to strike at the "let-down" of work after the Ribes eradication season - the time that is not being utilized to the best advantage. Mr. Pierce brought out that during the summer the eradication of Ribes is good educational work as well. Mr. Amadon stated that analysis of blister rust agent's reports show sharp decline in interviewing in August and late in the eradication season, and that this could be corrected if the agents were given assistance in supervising eradication work. Mr. Reynolds asked if we have used the methods in securing cooperation that selling organizations use in their work. Do we have in our organization any sales managers doing nothing

else? He described a separate selling organization having nothing else to do but selling cooperation. One man to travel around a state, perhaps three rounds a year. Mr. Detwiler showed that extension is our sales organization, that the extension people are responsible for selling methods. That the specialist is the sales manager for his particular branch. Discussion postponed until papers on these special topics are read.

Mr. Filley asked Mr. Detwiler for explanation of doubling work for each dollar expended in 1924. Mr. Detwiler replied that all funds, state and federal were included, that it was merely a goal to strive for, although it might not be accomplished. Mr. Newman in regard to pine survey, showed that according to Mr. Foster's figures on pine acreage, he (Newman) has already covered more area than that in pine. Mr. Detwiler said they were talking of two different things, pine acreage and area covered to protect acreage of pine; shows importance of definite survey data and maps.

Doctor York understood Mr. Detwiler to refer to pine survey of especially commercial stands. What is initial value in survey of that sort - it is the kind being done in New York.

Mr. Detwiler corrected him. General survey of all white pine in State, regardless of size or whether plantation, or natural growth. Amadon also corrected York in regards to methods used in New York - the New York survey includes young pine areas as well as commercial. Discussion ended by Filler, who said special paper should precede this.

Chairman introduced Mr. Collingwood, who talked from outline. He mentioned two bulletins on educational campaigns - one is U. S. D. A. Bulletin #250 - "Educational Milk for Health Campaigns." Mr. Collingwood's paper not filed. Mr. Fivaz mentioned an example of getting others to work for nothing and cited the case of the Canadian Forestry Associations Speakers Bureau.

Mr. Reynolds, called on by Mr. Detwiler, spoke of getting town forests started. He had to study physchology of the small town, send supervisors written out warrant to include at town meetings and appoint committee to investigate possibility of establishing a town forest. He found a committee easier to work with since even their report and recommendations to the next town meeting can be written out for them to approve. Mr. Newman told about blister rust methods in New Hampshire; reports to towns where work done, letters to other towns, posters used in place of long articles. State law also provides that an article can be inserted in the town warrant on request of ten persons in the town - this has been used also.

Mr. Amadon told of a trial of the project leader idea in one county in New York. It failed even to get project leaders to eradicate Ribes, despite fact that three (?) specialists were helping.

Mr. Detwiler summarized this discussion - Amadon's problem is to give leaders some definite thing to get done - not too high an aim. Bulletins and other publications do not "take" with people as they did ten years ago. Mr. Reynolds said Government publications are too long for anyone to read, farmer works long days - his mind is not for detail. "Jack Frost" folder is best type out so far. Adjournment for lunch.

Meeting called to order 2:10 P.M. by Chairman Woodward. Mr. Filler was introduced and spoke from his notes (notes filed), explaining several summary charts analyzing work of year. Doctor York asked what should be included under initial interview, whether persons talked to individually after a meeting or during an exhibit. Settling this question postponed. Newman asked for copies of charts - chairman stated that these would be included in the report of the proceedings of the Conference.

Chairman introduced Mr. Perry, who stated that he, as well as Frost, had a definite plan of work. Also that a definite detailed plan of work applicable to all leaders is not possible. He read an outline of such a plan.

Chairman introduced Doctor York who read his paper. No remarks.

Chairman introduced Mr. Newman, who talked from outline. Points mentioned were:- (not exact words). "As in New Hampshire, most work is done through the town, the educational work of a blister rust agent will vary with that in some other states where most of the work is with the individual. Biggest thing an agent has on his shoulders is the carrying out of a red hot line of educational work. We are apt to forget or overlook differences in conditions in various counties. It is unfair to compare work of different agents. However, there are certain definite lines of attack which agents can use in beginning in a district. Some have to be discarded later - for instance, the method of holding meetings in cooperation with the Farm Bureau in one New Hampshire district, because the Farm Bureau is not strong there because agriculture is preceded by tourist business. No need to go into details of exhibits, their use is well known. Exhibits in one district resulted in 300 requests for inspection. These exhibits cost around $12.00 (total).

In regard to posters - state office in New Hampshire looks over and checks all that are put out. In the past I have worked out most of them myself, but my ideas are about used up. My thought was to get the agent to suggest and develop ideas for poster. In regard to cooperation with organizations in Cheshire County, a Farm Bureau Forestry Committee has recently been formed. Have been holding a series of meetings, affording agent a chance to talk blister rust control. In another county (Merrimack) another such committee has been appointed. (Newman will hand Secretary brief review of his talk before end of conference).

Ten minute intermission called.

Meeting called to order again, and chairman introduced Mr. Frost.

Mr. Riley led discussion on "Building up Agent's Sales Talk with Definite Facts and Figures." Mr. Newman (called on by Mr. Detwiler) told how some of data for his charts was securedby Mr. Endersbee. Prime requisite is to get posters and other material read - Blister Rust being fairly well known as a word is not a good first phrase to start with. Better to use the teaser type of wording. Meeting adjourned at 5:00 P.M.

Dinner was held at the City Club at 6:00 P.M. at which Toastmaster, Dr. Metcalf called on several of those present, especially Mr. Harris Reynolds who spoke on Town Forests and Mr. S. T. Dana who told of the problems of Forestry from a National viewpoint, with an explanation of the work of the new Forest Experiment Station for the northeastern States.

Dinner over at 8:00 P.M.

Tuesday, February 19, 1924.

Chairman, Professor Woodward opened the meeting at 10:15 A.M., calling on Mr. J. E. Riley who read his paper. No discussion.

Chairman Woodward introduced Mr. Endersbee who read his paper. Mr. Woodward had to leave, and Mr. Riley was appointed Chairman in his place.

Chairman Riley opened meeting for discussion on educational assistant to State Leader and Specialist. Mr. Detwiler asked if any State Leaders had suitable man for job or any funds. Frost said it was so sudden he couldn't say, but no money is available. Newman said idea is good. Corliss would be good man for the job. Suggested Mr. Foster's opinion. Mr. Foster said "desirable enough, but is it sufficient importance for additional cost. If we can get more work now than we can handle, such a man not needed. Endersbee is doing some of that, and we have Mr. Corliss." Perry said a specialist could cover this work in Massachusetts. Has no State funds for it. There is a crying

need, however, for such a man to head up general educational work. Anderson said not enough State money but agreed with Perry in use of specialist. Mr. Filley said that such a man's entire time is not needed in Connecticut, or warranted - but one covering three or four States as specialist would help. York said such a man was not needed - this work can be done by specialist. Mr. Riley said one or the other is needed in Vermont, but specialist in New York and Vermont can't give Vermont enough time. Mr. Detwiler summed up - seems that this work is necessary, that funds are only thing in the way. Doctor York said an educational assistant relieving Agent of his general educational duties would tend to destroy his responsibility, Mr. Newman said he would be against proposition of having such a man if it would destroy the Agent's responsibility. Riley took issue to matter of destroying of responsibility by drawing parallel to business concern with advertising branch. Filley said one man in Washington acting in the capacity of an educational leader would be enough. Mr. Detwiler said Mr. Pierce was acting in this capacity, but that in districts there is much detailed work that can be handled best by general educational assistant to State Leader or by a specialist. Suggested Mr. Pierce talk next.

Chairman introduced Mr. Pierce who read his paper. Discussion on motion picture films followed led by Mr. Detwiler. The Conference was in favor of bringing the old films up-to-date and putting out a new film. Mr. Newman suggested more liberal titles, said that one he has recently seen has not enough of these. This will be discussed in special meeting of State Leaders after this meeting adjourns. Mr. Filley announced availability of new Forest Service film taken in Connecticut that is very good. Doctor Martin asked opinions on new "Jack Frost" folder. This postponed for later discussion by the State Leaders. Frost described an exhibit of his. Pierce told of definite results from

Brockway's exhibit. Reynolds has several thousand folders at $40 per M. Frost can use 1,000, Newman cannot buy any until new fiscal year. Perry can use 1,000, Anderson several thousand, Filley 1,000, Riley cannot buy any until definite State policy decided by new State Forester. Amadon does not need any more now.

Chairman introduced Mr. Allanson.

Secretary moved that "Mr. Allanson be extended a vote of thanks by Conference for the sincere interest he has shown, and the time he has given to come here for the purpose of clarifying for us the Departmental regulations and procedure." Seconded by Doctor Martin and unanimously passed.

Meeting adjourned for lunch at 12:35 P.M.

Meeting opened at 2:00 P.M. by Chairman Riley who called on Mr. Sheals to lead red currant discussion. Mr. Sheals told of Rhode Island policy of removing only infected cultivated bushes from control regions and that little or no infection could be traced to cultivated red currants. No paper presented.

Chairman then called on Doctor Metcalf who said he would limit his paper to red currants. He explained a susceptibility chart, and summarized Miss Taylor's spore count experiment. Black currants, including ornamentals can be eliminated from the discussion. In applying these results, there are many complications. Some blacks show very low (X) of infection, and in case of some reds, Franco-German for instance, infection was 0 in greenhouse and a trace out of doors. He explained chart summarizing per cent of varieties coming into each susceptibility (X) class for both reds and blacks. In the varieties of both colors there is a wide range of infection. Numerous other factors mentioned, and question opened for discussion.

Mr. Perry said conditions are acute in Plymouth Co. Others told of damage from red currants, York, Anderson, Hodgkins, Corliss, Brockway, etc., and Frost and Anderson of infection on cultivated Ribes. Mr. Detwiler re-

read part of his paper regarding policy on cultivated Ribes eradication. He also spoke against the black currant urging the outlawing of the species within the State.

Vote was taken on adoption of Mr. Detwiler's Ribes policy - unanimous approval voted by the Conference. Mr. Riley asked if this answered Mr. Amadon's suggestion that each State define its own policy. Mr. Detwiler answered, showing that we have been united on width of the protective strip and that we should stick to the 6-900 foot Ribes free zone. He went into further details on his recommendation.

Doctor Metcalf said that although we have much larger and more important immediate work than the refining of our work as to resistant Ribes varieties and reduction of protective strip, there is no reason why these refinements cannot come about. He said that his remarks this afternoon were from Spaulding's Bulletin, which should be regarded more as the Blister Rust Bible.

Chairman introduced Mr. Filley who talked from blister rust bulletin of Connecticut and from notes. Pine survey cost, for all land 31/100 cents per acre, and was done by one man for one winter and three for the next winter. One must be a forester, all must know blister rust as the locating of new infections was a side-light of the job. Forest area map of State was a big help in making survey. Used data before it was finished in getting an appropriation. Has not been used enough yet for publicity. Figures from it should be used in general educational work. Much other data can be secured during survey, by interviewing owners, getting estimates of values, etc. This survey has been very valuable to Connecticut.

Mr. Foster told of general forest survey practically complete for New Hampshire. It is also of use to blister rust work. However, land is not classified as to pine and other species so use is not as extensive as in Connecticut, but we can show areas in potential pine land and land that should be pine. This winte

winter they plan to add to their survey figures - cut, export, import and other figures. Over 150 million board feet now comes into New Hampshire annually, which shows conclusively that the State must strive to grow a lot more at home.

Filley suggested that a blister rust agent could best supervise such survey work in his country during the fall.

Foster asked Filley if actual map or just figures were secured. Filley answered that a map on U.S.G.S. basis was secured. Foster asked - if growing of pine wasn't encouraged outside of pine areas. Filley answered that more emphasis was placed on planting outside of the area because there Ribes are few or absent.

Mr. Filler reiterated his suggestion that the blister rust agent could estimate fairly closely the pine area of each town, and perhaps get some more figures or maps of pine areas.

Mr. Boomer of New Hampshire told of his making type map for three of his towns. He said that this seems easier than making estimate of pine in town.

Mr. Brockway told of use of pine maps for some towns in his district. Mr. Filler asked him if he could make a rough estimate of per cent of pine in a town. Brockway answered that he could do this for the ten towns already worked in.

Filler asked Fogg what methods he used. Fogg told of getting names, acreage, location, etc., from assessment rolls for each town and going to supervisors to get information on part in pine.

Doctor York said that in one county there are 65,000 acres pine and over 50 per cent of it is under mortgage. Mr. Detwiler asked if York had driven hard enough at the bankers. York replied that this data is only three weeks old. Mr. Detwiler said that this point was important as much could be accomplished by selling blister rust control to the bankers.

Filler's question was not answered - Frost said he had not fallen in love with the idea yet. Foster said that in New Hampshire and some parts of Maine, whole towns can be blocked out as pine areas.

Mr. Fivaz said that written data on the blister rust control policy of the Springfield Land Bank should be in every Agent's sales book or silent salesman. Each Agent already has been given this data through the medium of the News Letter.

Doctor York brought up a question on precedance that should be given to pine holdings based on varied size. Motion made, seconded, and passed that discussion be postponed and program continued.

Chairman introduced Mr. Foster who spoke from notes on "Service and Forestry Work.". He said an agent must be a live wire, he must impress the public that he speaks with authority on his subject, he must be well read, cannot be narrow. Agents must be given every bit of information we can give them. "Timber, Mine or Crop" is full of valuable facts and conclusions. Good place for agent to get inspiration. Agent must not be over-zealous or over-bearing. He must not assume undue prominence, must be modest. The kind of men we can develop are of the good general forestry type and there should be definiteness on their chances in the future.

Chairman called on Doctor Pennington for "Remarks on his work in the West." Special effort was made to find infected pines and to find possible sources for infection, from imported stock. Campaign really began in 1922. Imported plantings of pine found diseased in vicinity of Vancouver. In 1913 there was a wave of infection in Vancouver. Again in 1917 another wave increasing in breadth, and over stepping the "dry belt" where no pines grow. Settlers (mainly English) brought in cultivated blacks and in Vancouver most of infection near black currants.

In 1922 infection was found in Washington, all around Puget Sound Region and West Coast. Black currants were infected, also some wild Ribes, one on pine. In 1923 the disease had extended on the black currants along the coast line. Also found on cultivated black currants in twenty-one places in dry belt in 1923, none found in 1922. Also southly, in Washington, it was found on red and black cultivated currants. Doctor Pennington told of another infection found.

He studied in winter of 22-23, to get meteorological factors. No white pine infection could be found in Washington so explanation of presence of blister rust was not so easy. No evidence of transportation of diseased pine and Ribes in this region. Bird factor - two lines of migration of birds known, but infection occurred after birds went north and before they came south. No transmigration across area, so bird theory of spore carrying is done away with. Another theory was that of gradual spread by urediniospores and overwintering on Ribes. This is very limited, and little chance of that in this area. Crossing of leaf periods found only in South Oregon. The other explanation is by wind borne aecia spores. In looking up records of wind, the 1922 and 1923 infections would be explained in every case by wind and moisture conditions. We are forced to the conclusion that there has been long distance spread by wind-borne aeciospores, 300 miles in some cases.

Doctor Gussow not being present, and in view of crowded program, his paper was not read, but will be included in the conference report.

Chairman called on Mr. Fivaz for his paper. Discussion will follow in State Leaders' meeting.

Doctor York spoke on "Publicity Methods," no paper read.

Mr. Pierce asked if he could send anything to agents and asked for suggestions. Newman suggested criticising each others ideas constructively.

Motion made, recorded and passed that "Professor Woodward and Mr. Riley be extended a vote of thanks for officiating at this meeting." Conference adjourned at 5:00 P.M.

ATTENDANCE

Allanson, H. E.
Allen, R. H.
Amadon, A. F.
Anderson, O. C.
Boomer, S. H.
Brockway, E. M.
Collingwood, G. H.
Corliss, J. M.
Dana, S. T.
Detwiler, S. B.
Doore, G. S.
Endersbee, W. J.
Filley, W. O.
Filler, E. C.
Fivaz, A. E.
Fogg, A. E.
Foster, J. F.
Frost, W. O.
Gilbert, W. A.
Hicock, H. W.
Hodgkins, L. W.
Martin, J. F.
Metcalf, Haven
Meyer, W. H.
Newman, L. E.
Ninman, H. J.
Pennington, L. H.
Perry, C. C.
Pierce, Roy G.
Reynolds, Harris A.
Riley, J. E., Jr.
Roop, W. T.
Sheals, R. A.
Snell, Walter H.
Spaulding, Perley
Stene, A. E.
Stimson, K. H.
Westveld, Marinus
Woodward, Karl W.
York, H. H.